JOURNAL
OF THE
AMERICAN VETERINARY MEDICAL ASSOCIATION

In This Issue

GENERAL ARTICLES

Isolation of Newcastle Disease Virus from the Eye of a Human Being—*D. P. Gustafson and H. E. Moses* 1
Dairy Products for the United States Personnel in Germany and Austria—*Robert L. Jimison* 3
Listeria Monocytogenes in Liver of Pig Dying from Lye Poisoning—*F. M. Bolin and D. F. Eveleth* 7

SURGERY AND OBSTETRICS

Mechanical Aspects of Ear Treatment—*W. W. Armistead* 8
Listeria Monocytogenes Associated with Bovine Abortion—*L. C. Ferguson, E. H. Bohl, and W. L. Ingalls* 10
Diabetes Insipidus in the Dog—*S. Pollock* 12
Board Splints that Fit—*A. A. Barry* 15
The Harderian Gland of the Dog in Chronic Ectopia—A Case Report—*H. J. Werner and J. H. Roberts* 16

CLINICAL DATA

Toxoplasmosis in the Dog with Report of a New Case—*Donald E. Jasper* .. 22
Preliminary Report on the Blood Picture of the Arabian Horse—*M. F. Hansen and A. C. Todd* 26
Carotid Loops in Cattle—*Harry A. Leonard and Marley C. McFadden* 27
Streptomycin in the Treatment of Actinomycosis—*H. E. Kingman and J. S. Palen* 28
Diabetes Mellitus in Dogs and Cats—Report of Nine Cases—*Carl F. Schlotthauer and J. A. S. Millar* 31
Epizoötic Gastroenteritis in Chinchillas—*Hilan F. Keagy and Evelyn H. Keagy* 35
Recent Developments in the Control of Insect and Parasitic Pests—*Elton J. Hansens* 38

NUTRITION

Beef Cattle Nutrition 46

EDITORIAL

1950 in Retrospect 48

Surgery and Obstetrics 8
Clinical Data 21
Nutrition 46
Editorial 48
Current Literature 50
The News 59

AVMA Report, ad page 12; Coming Meetings, ad page 24.

(Contents continued on ad pages 2 and 4)

Volume CXVIII JANUARY 1951 Number 886

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IV. Progress Despite Agricultural Depression

When laboratories of research and production came to the aid of clinical veterinary medicine in the 1920's, the spectacle filing across the screen was not promising.

Severe epizoötics, through default of methodical prophylaxis, were threatening. The deadly outbreaks of swine infections in 1926 are but one of many unforgettable examples. Farming was "in the red" in the face of booming industry. Unmanaged "dumping" of wartime surpluses intensified the farmers' privation. Expectedly, veterinarians, including more than 2,300 displaced by military service, were distraught.

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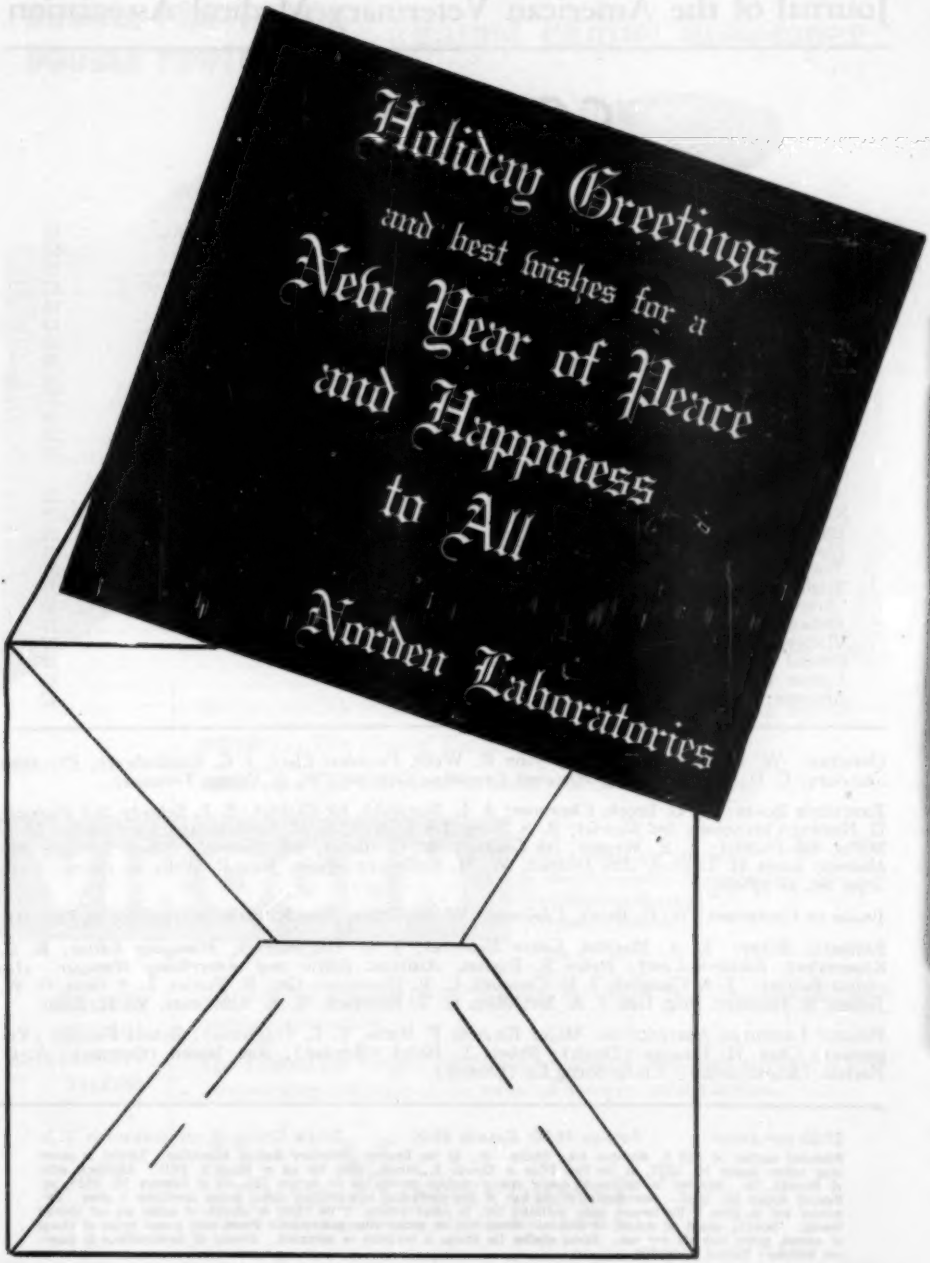
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CONTENTS

(*Continued from Cover*)

SURGERY AND OBSTETRICS

Bovine Infertility 11
New Anesthetic for Horses 11
Cortisone Retards Healing 15
Fertility in Cows 15
Tromexan, New Anticoagulant 18
Notes on Equine Breeding 19
Electroplectic Anesthesia 19
Penicillin in Pyemic Arthritis of Foals 19
AVMA Membership Cards Will Be Delayed Due to New System 19
The Veterinarian and the Breeding and Raising of Domestic Animals 20
Oldest Equine Mother 20
Fertility of Bulls 20
Vibrionic Abortion 20

CLINICAL DATA

Aureotracin 21
New Fungicides 21
Blackhead Treatment 21
Blowflies on Danish Sheep 21
Trichomoniasis in Cattle 21
Trichocidin—Trichomonacidal Agent 25
"Antivirotics" 30
Stilbestrol Affects Gastric Secretion 37
Virility of Spermatozoa 37
Official Beginning of Veterinary Meat Inspection? 37
Canine Histoplasmosis 41
Aërosols: Microfog Medication 42

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CONTENTS—Continued

Pig Losses in 1950 43
Magnesium Sulfate in Acetonemia 43
Fuadin and Anthiomaline 43
Johne's Disease Treatment 44
Is Equine Periodic Ophthalmia a Leptospirosis? 44
Lindane Poisoning in Calves 44
Diseases and Treatment of Feedlot Cattle 44
Rinderpest Control in Japan 44
Plastic Teat Tube 44
Atrophic Rhinitis in Swine 45
Obstinate Skin Diseases of Dogs 45
Hypersensitivity in Animals 45
Halogeton Poisoning in Western Sheep 45
Skeletal Abnormalities in Chickens 45

NUTRITION

Deficiency of Mineral Elements, 46; Amino Acid Research, 46; Stock Feed from Wood, 47; Vitamin C in Virus Diseases, 47; Transfer of Rumen Fluids, 47.

EDITORIAL

The Stability of Livestock Production 49

CURRENT LITERATURE

ABSTRACTS

Streptomycin and Johne's Disease, 50; Sulfadiazine in Brucellosis, 50; Allergen Specificity, 50; Foot-and-Mouth Disease Vaccine, 50; Colostral Immunity, 50; Toxicology of Aldrin, 50; Teat-Closing Mechanisms, 50; Hyperkeratosis and Feed, 51; Brucellosis in Swine, 51; Streptococcus Infection in Pigs, 51; Gastric Cancer in a Horse, 51; Actinomycosis in a Dog, 51; Reticulocytes in Anaplasmosis and Piroplasmosis, 52; Leptospirosis in Israel, 52; Eradication of Mange, 52; Basis for Handling Animal Parasitisms, 53; Duties of a Russian Veterinarian, 53; Chlorinated Turpentine Treatment for Ticks, 54; Possibility of Antivitamin Effects in Metallic Poisoning, 54; Acetonemia, 54.

BOOKS AND REPORTS

Laboratory Examinations in Clinical Diagnosis, 54; Animal Facts and Fallacies, 55; Veterinary Guide for Farmers, 55; Animal Nutrition, 55; Laboratory Animals, 55; Equine Infectious Anemia, 56; Survival Under Atomic Attack, 56; Defense Against Atomic Attack, 56; The Farm Dog, 56; Inheritance in Dogs, 56; Food and Nutrition Research, 56; Gallery of American Dogs, 57; Trimming Chart, 57; Cats and Kittens, 57; Dissection of the Cat, 57; The Physician Examines the Bible, 57; Medical Entomology, 58; Physiotherapy in Veterinary Medicine, 58; Received But Not Reviewed, 58.

THE NEWS

Milwaukee Prepares for 1951 AVMA Convention, August 20-23 59
President Coffee Recovering from Eye Operation 60
Executive Board Holds Winter Meeting 60
Information on Public Law 779 61
AVMA Membership Cards Will Be Delayed Due to New System 62
Appreciates Honor Conferred 62
"Feeding Forum" To Be Sent To AVMA Members 62
French and Turkish Veterinarians Visit AVMA Office 63
Dr. N. J. Miller Elected to Colorado State Senate 64
Emergency Advisory Committee Meets 64
Brucellosis Congress 64
Association of Land-Grant College and Universities, Division of Veterinary Medicine 65
Student Chapter Activities 65
Women's Auxiliary 65
U. S. Government 67
Applications 67
Among the States and Provinces 68
Foreign News 75
Veterinary Military Service 78
Births 79
Deaths 79

MISCELLANEOUS

Heartworm Cycle, 2; A Warning, 7; The Results of Research, 7.
Watch Your English and Ours; Coming Meetings ..... *ad page* 24

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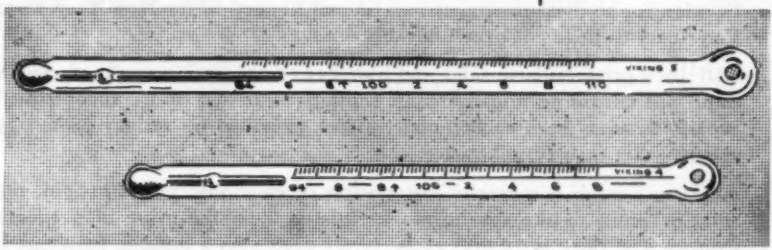

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AVMA ☆ Report

Veterinary Medical Activities

✤ President W. M. Coffee was hospitalized on Nov. 12, 1950, because of a detached retina. He was forced to cancel all November and December speaking engagements, and was unable to attend the meeting of the Executive Board in Chicago, Nov. 28-29, 1950.

★ ★ ★

✤ The Council on Education revised the "Essentials of an Acceptable Veterinary School" at its meeting on Nov. 25, 1950, incorporating numerous changes which collectively will elevate the plane of teaching in keeping with the steady progress of professional knowledge. The proposed revisions have been submitted to the Executive Board for approval.

★ ★ ★

✤ AVMA research fellows are demonstrating the value of postgraduate training. Four appeared on the program of the Conference of Research Workers in Animal Diseases in North America at Chicago, Nov. 27, 1950. They were: Drs. L. E. Johnson, L. M. Jones, E. V. Morse, and C. J. York.

★ ★ ★

✤ Chairman A. R. Theobald, of the Humane Act Award Committee, invites nominations for the 1951 award. AVMA members and students of veterinary medicine are urged to send names of candidates and records of humane acts to the AVMA office immediately. Girls and boys under 18 are eligible.

★ ★ ★

✤ Veterinarians and county agents were brought into closer contact when Assistant Executive Secretary C. D. Van Houweling attended the annual convention of the National Association of County Agricultural Agents in Chicago on Nov. 28, 1950.

★ ★ ★

✤ The majority of authoritative national magazine articles about veterinary medicine result from coöperation given writers by the AVMA staff. Established science writers and editors consult the Association for technical information and guidance in obtaining source material.

★ ★ ★

✤ Mr. J. J. Shaffer, of the AVMA staff, attended the Third National Medical Public Relations Conference, sponsored by the American Medical Association and held in Cleveland, Ohio, Dec. 3-4, 1950.

★ ★ ★

✤ Assistant Executive Secretary C. D. Van Houweling attended the meeting of the Nebraska V.M.A., at Lincoln, Dec. 5-7, 1950, and participated in the program in place of President W. M. Coffee.

★ ★ ★

✤ Dr. J. S. Bengston, chairman of the Scientific Exhibits Committee, announces that he and the members of his committee—Drs. E. A. Benbrook, R. J. Cyrog, J. V. Lacroix, and C. D. Van Houweling—have selected tuberculosis as the subject of their 1951 exhibit, which will be completed in time for showing at the American Medical Association meeting in Atlantic City, in June, 1951.

★ ★ ★

✤ When you move, be sure to notify the AVMA office. The best plan is to write as soon as you select a new home—get it done before the rush of packing, moving, and unpacking. Your money helps to pay the cost of returning unclaimed JOURNALS, so please notify us in advance.

★ ★ ★

✤ The Brucellosis Exhibit prepared by an AVMA committee in 1949 continues to serve. Dr. P. A. Soldner, Springfield, Ohio, arranged for showing it at the Clark County (Ohio) Medical Society's centennial celebration, Dec. 14-16, 1950, where it again drew medical and public attention to the work done by veterinarians.

★ ★ ★

✤ Milwaukee is preparing for the AVMA annual meeting, Aug. 20-23, 1951. Facilities at the Municipal Auditorium are the most complete ever offered. The program is beginning to take shape, with chairmen and secretaries of several sections meeting at the AVMA office late in November, 1950.

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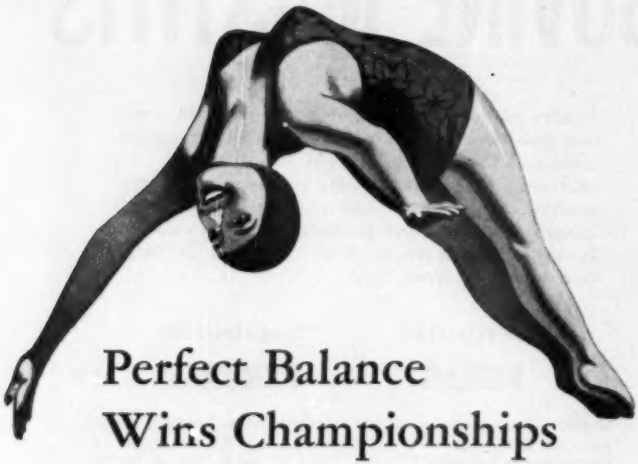

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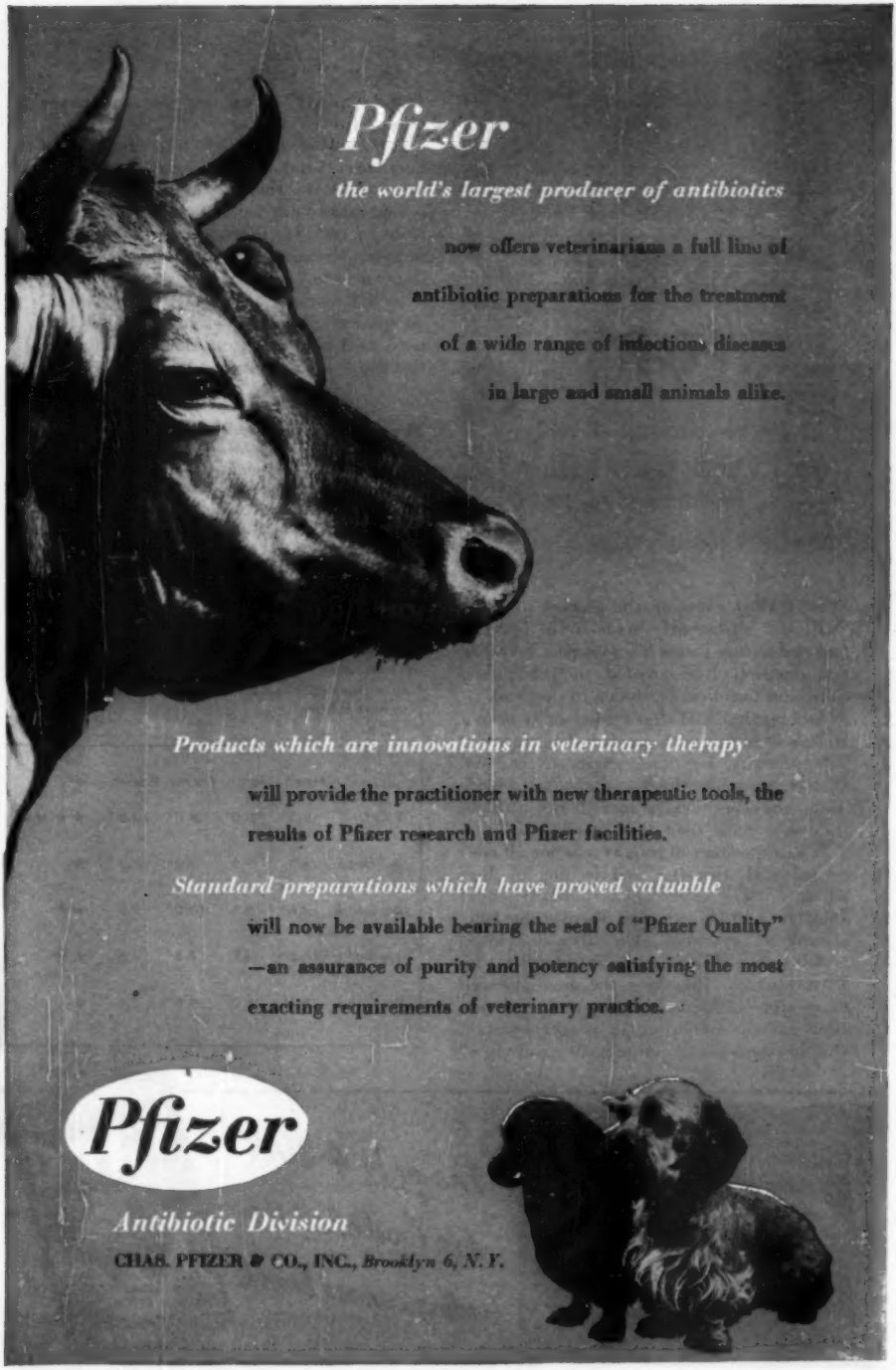
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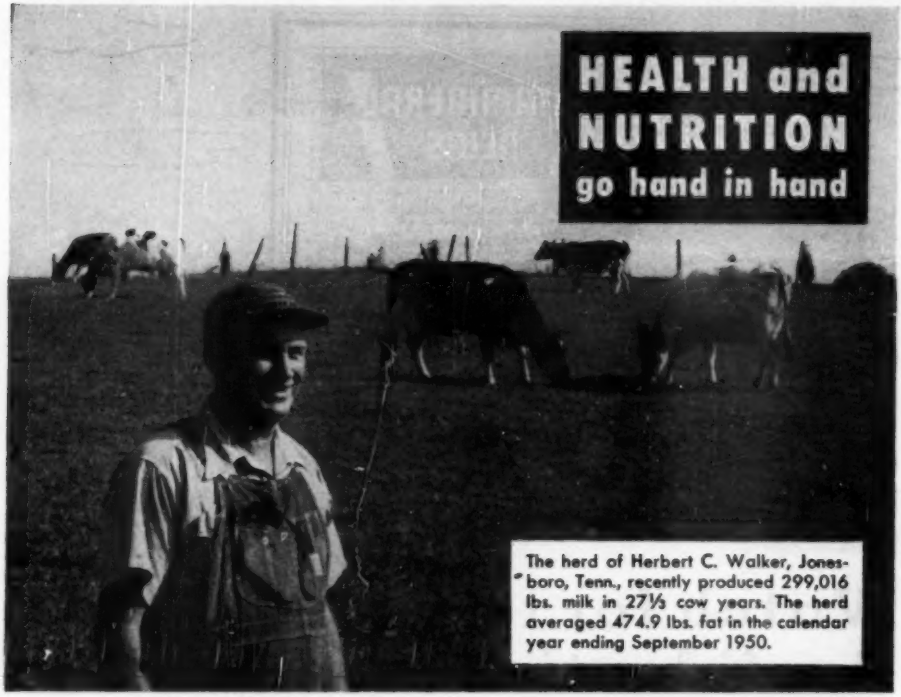

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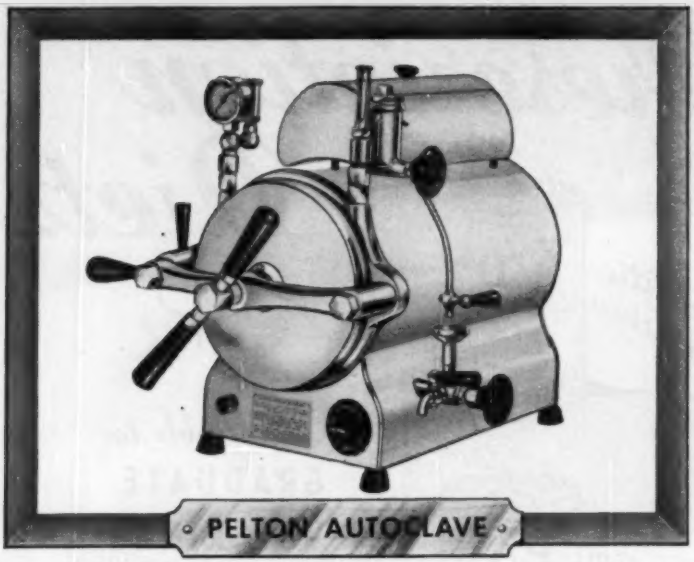

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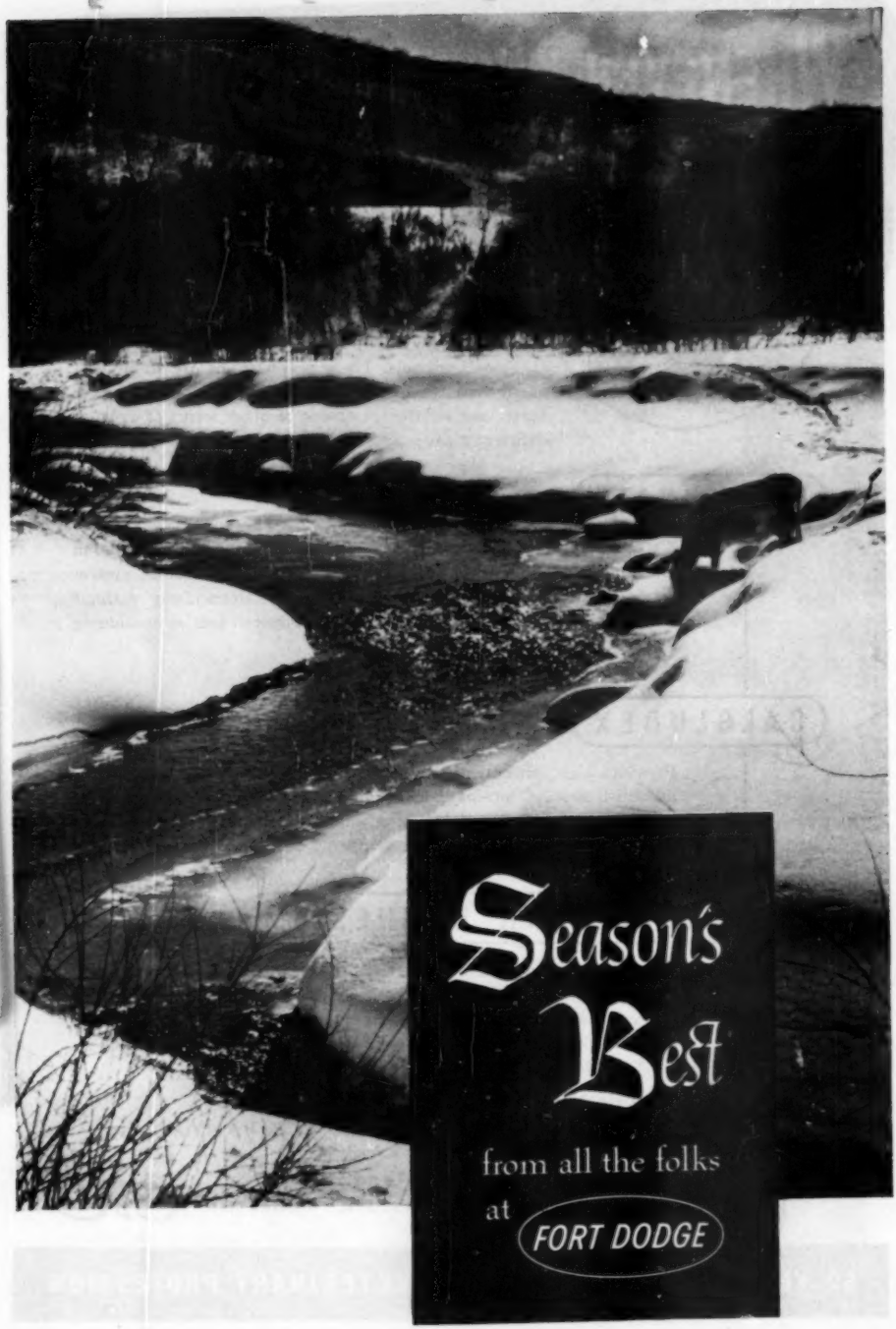
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Isolation of Newcastle Disease Virus from the Eye of a Human Being

D. P. GUSTAFSON, D.V.M., and H. E. MOSES, D.V.M., M.S.

LaFayette, Indiana

NEWCASTLE DISEASE (ND) has been recognized as a disease of minor importance in human beings by Rivers.[1] It is characterized by a superficial unilateral conjunctivitis without involvement of the cornea, which may be part of a syndrome including preauricular lymphadenitis, headache, malaise, and chills. No significant rise in temperature has been noted. Recovery is complete in one or two weeks without treatment. The disease was first reported in man by Burnet[2] and subsequently by Anderson,[3] both of Australia. The first case in the United States based on virus isolation was reported by Ingalls.[4] As reviewed by Blood,[5] serologic and epidemiologic considerations have been the basis for the introduction of several additional titles into the literature. It is of note that there have been only 5 human cases of ND identified by isolation of the virus.

On Dec. 13, 1949, a veterinarian of the Department of Veterinary Science, Purdue University, exhibited a moderate inflammation of the right eye. On examination, it was noted that there was inflammation of the conjunctiva and sclera, without corneal involvement. Recovery was complete in five days without treatment. The veterinarian had been actively engaged in poultry disease diagnostic work. An investigation of the laboratory records revealed that he had handled chickens in active stages of ND during two successive days previous to the occurrence of the inflammation of his eye. One case had been identified by isolation of the virus and another group was diagnosed as having ND on the basis of serologic tests.

Eye washings were made with sterile distilled water. Of the washings, 1 cc. was treated with 50 mg. of streptomycin and 5,000 Oxford units of penicillin, each in 0.5 cc. of sterile distilled water. This material was used in 0.2-cc. amounts to inoculate 8, 12-day-old embryonating chicken eggs via the allantoic chamber. A citrated blood sample obtained at this time was tested[6] for hemagglutination-inhibition (HI) antibodies. The HI antibodies were not demonstrable by this technique. The embryos died between 136 and 184 hours after inoculation, an apparent delay of embryo death that has characterized some field strains of ND virus.[7] The amnioallantoic (a.a.) fluids from each egg were collected and tested separately. The fluids were cultured in nutrient broth, thioglycollate broth, and on bacto-tryptose agar slants. Bacterial contamination was not evident. Tests for hemagglutination were made of the fluids and these were found to have hemagglutination activity. Intra-allantoic inoculation of 12-day-old chicken embryos with five samples of these fluids resulted in the death of all embryos within fifty hours of inoculation. The a.a. fluids were removed and found to be free of bac-

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teria by the procedures used previously. The fluids were tested for hemagglutination activity and found to be positive. A hemagglutination titer of 1:1,280 in a composite fluid sample was inhibited by known antiserum for ND virus.

Three ND-susceptible, 2-week-old chicks were inoculated intranasally with 0.1 cc. of 10^{-2} dilution of the a.a. fluids of the second embryo passage containing approximately 10^6 embryo minimal lethal doses of virus. One chick died on the sixth day subsequent to exposure. On the seventh day, the 2 remaining chicks were showing symptoms suggestive of ND. Citrated blood samples secured at this time were found to contain significant measures of HI antibodies.

Neutralization tests were made of the veterinarian's plasma thirty-six, forty-two, fifty-three, and sixty days after the conjunctivitis was first noted. Virus isolated from the veterinarian and a CRE strain were used. In infectivity neutralization tests, the plasma was used as such and, in addition, the fifty-three-day sample was used after being heated to 56 C. for thirty minutes to eliminate the possible nonspecific, neutralizing activity of the plasma, as recommended by Ginsberg and Horsfall.[8] Titers of 10 to 10^3 infectivity neutralization units were present in the unheated plasma, whereas none was demonstrated in the heated plasma. Tests for HI antibodies were negative.

Reports on ND in human beings present some interesting serologic aspects which are confirmed in part by these studies. Burnet[2] and Anderson[3] reported slight and insignificant HI antibody changes, respectively, in convalescent serum. Ingalls[4] reported a "strongly positive" HI antibody titer in 1 of the 2 individuals from whom he isolated ND virus; no HI tests were reported on the second individual. Only Burnet[2] conducted infectivity neutralization tests; he found a slight rise in antibodies. His "inactivation" of the serum presumably removed any heat-labile, nonspecific, neutralizing property described by Ginsberg and Horsfall.[8] The results obtained in connection with this, the sixth, case of ND reported in man established by virus isolation confirm those of Anderson[3] for the HI antibodies and approximate those of Burnet[2] for the infectivity neutralization antibodies.

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Heartworm Cycle.—Kume and Itagati (*Jap. J. Vet. Sci.*, April, 1949) traced the migrations of *Dirofilaria immitis* from the site of mosquito bites to the right ventricle via the subcutaneous tissue and venous circulation. The journey and maturation required three to four months, at which time adult worms were 3.2 cm. to 11.0 cm. long. The route of escape of the ova from the host's body is not mentioned, important as that seems. These authors declare that much remains to be learned about the life cycles of the Filaria species.

At the end of World War I, cholera was the only swine disease of consequence considered by practicing veterinarians. Today, there are 31 important diseases routinely kept under control. They include tuberculosis, brucellosis, erysipelas, dysentery, enteritides, variola, deficiency diseases, worm parasites, and others.

The immunity produced by vaccination in pigs parasitized, or otherwise in poor physical condition, is below par.—*E. F. Saunders, D.V.M., Missouri.*

Dairy Products for the United States Personnel in Germany and Austria

MAJOR ROBERT L. JIMISON, V.C., U.S. Army

THE SUPERVISION of the supply of safe, wholesome, fresh milk to the American occupation forces in Germany and Austria is one of the most outstanding contributions of the Army Veterinary Service in Europe today. The milk route from Denmark through Germany to Vienna, Austria, is the largest and the longest daily, bottled milk delivery service known. The early stages of postwar planning for the occupation of Germany and Austria posed many problems relative to supplying an adequate and wholesome diet for the Armed Forces and their dependents. Although recognizing a need for fresh fruits and vegetables as well as dairy products, a fresh milk supply was considered a necessity for the health and morale of the occupational personnel.

Several solutions to the fresh milk problem were proposed, among which were: (1) organization of a reconstituted milk program; (2) organization of dairies, using dairy cattle imported from the United States; and (3) purchase of fresh milk from an adjacent country. The latter solution was adopted and Denmark was selected as the country of choice because it had suffered the least damage to its dairy industry and because it was an exporting country producing dairy products in the amounts required.

PRELIMINARY ARRANGEMENTS

During the preliminary planning stages, a representative of a large milk distributor in the United States was invited by the Army to survey the situation and make suggestions. After surveying the situation in Denmark, he reported that, in his opinion, distribution problems would be difficult to overcome. Nevertheless, it was decided to make every effort to supply the troops with milk.

All procurement negotiations were conducted with the Butter Export Committee, through which dairy products were exported. This Committee, through its director, Mr. L. P. Frederiksen, was coöperative, within the limitations placed upon it by its duty to the Danish state, and deserves the highest praise. The Committee made all purchases from Danish "co-ops" and in general represented the industry as well as the state.

The U.S. Army Veterinary Corps was assigned early in 1946 to determine the sanitary condition of the Danish dairy industry. The survey, conducted by veterinary officers under the supervision of the chief veterinarian for the office of the theater surgeon, European Theater, indicated that the veterinary profession and the dairy industry in Denmark worked together successfully to produce high quality milk, butter, and cheese. Denmark is Europe's greatest exporter of high quality dairy products and, to maintain this position, was taking every possible step to see that this quality was maintained.

—*Danish Butter Export Committee*

Fig. 1—Map showing location of Danish dairies. Milk production in Denmark, in 1947, totalling 3,700,000 tons, was handled by 1,606 dairies, 1,346 of which were cooperative, and 260 private dairies. They processed 3,350,000 tons and 350,000 tons respectively.

ORGANIZATION OF DANISH DAIRY INDUSTRY

Each of Denmark's 120 municipal areas operates under the supervision of the veterinary directorate of the Ministry of Agriculture. Within each area, a veterinarian conducts farm inspections and plant control programs. He is provided with modern laboratory facilities and sufficient personnel to carry out a complete quality control system, including monthly physical examinations of the dairy herds, monthly farm inspections, and frequent bacteriologic examinations of the raw and finished products.

The dairy industry is largely made up of coöperatives banded together in the National Federation of Danish Dairy Association which works constantly for improvement in production methods and for higher quality products.

Under such a situation, the Army could safely accept the sanitary standards of the Danish dairy industry. In addition to its supervisory sanitary and quality control programs with the Danish industry, the Army Veterinary Service was concerned with assuring that conditions of transport were satisfactory, that delivery schedules were followed, and that the problems created by the greatly increased volume of bottled milk shipped by each plant in the program were ironed out satisfactorily. Since the volume shipped by each plant was from 50 to 100 per cent greater than had previously been handled, and since the milk was to be shipped to distant points, including Vienna, a number of problems had to be considered and solved.

SHIPPING PROBLEMS

The first problem was that of containers. The use of paper bottles was thoroughly investigated and finally abandoned because the bottling machines and bottles would have to be imported from the United States. The one machine located in Copenhagen did not have sufficient capacity. The final choice was a glass bottle holding 1 liter.

This problem of containers plagued the operation from the beginning. Because it was considered necessary to maintain a bottle level sufficient for thirty days' milk supply, almost 2 million bottles were needed. This number was not available and, to obtain them, potash had to be brought from Germany (Russian zone). This was difficult to work out, but gradually sufficient bottles were secured after many trials and tribulations.

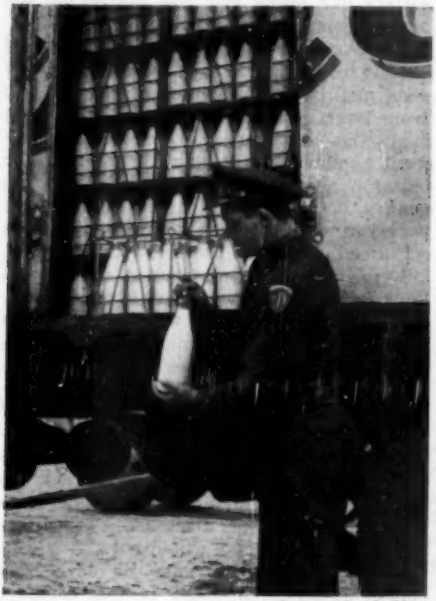
Financing of bottle production was another problem. The Danes were not eager to purchase so many bottles and have them pass out of their control into Germany. After many conferences and discussions, they agreed to gamble upon the Army's ability to return the empty bottles and its purchasing of milk for a long enough time to pay for them, and afford some profit to the Danish dairy industry. The Danes have been pleased with the outcome in both respects.

Distribution finally began. Plans were to supply the Bremerhaven enclave first, since it is located relatively close to Denmark, and after the system of distribution was perfected, to extend it efficiently and with reasonable economy to the entire occupied zone. However, after the first delivery, pressure was so great for immediate extension that the quartermaster was obliged to step up the distribution at once. A refrigerated truck company was dispatched to the Danish border to collect the milk from the creameries in Denmark and transport it to the occupied zone. The available trucks and refrigeration machinery had been used in World War II to deliver perishables from the beach to the Rhine. As they were in a worn out condition, they were unable to maintain a satisfactory delivery schedule. Finally, railroad facilities were utilized after train schedules were coördinated with the British authorities, through whose zone they must pass, and this system worked satisfactorily.

Danish bottle caps, made of aluminum foil, were too light. They loosened and in many cases came off en route. The practice, by railroad personnel, of throwing large chunks of ice on top of bottles and milk cases increased this difficulty. Consequently, combination aluminum foil and fiber caps were satisfactorily used. Icing methods were also improved.

At the time of writing, the Army is purchasing large quantities of milk daily in Denmark. The milk contains 3.25 per cent butterfat, is pasteurized in modern short-time holding pasteurizers, and is in every way, we believe, a safe, nutritious product. This milk is bottled in 1-liter glass bottles and packaged 12 bottles to a wire case. The bottle cap completely covers the pouring lip. The milk is shipped by refrigerator

truck from the dairy plants in Denmark to Flensburg-Weishe, Germany, a distance varying with the location of the dairy from 30 to 125 miles. Here, it is reloaded into American refrigerator railroad cars and shipped in a milk train to seven major breakdown points located throughout the American occupation zone of Germany.



—Hammerschmidt Photo

Fig. 2—Milk temperatures being checked at Flensburg-Weische, Germany, where milk is transferred from Danish trucks to U.S. Army refrigerated milk train.

QUALITY CONTROL

The problems of quality control involved some method of determining bacterial counts of the product after delivery. Accordingly, samples from each lot were collected at various stages of its progress through the zone: at Bremerhaven, Berlin, Frankfurt, Nuremberg, Munich, Vienna, Stuttgart, and several other places. One of the difficulties of the quality control system was that these counts had to be made at hospital laboratories by personnel unaccustomed to milk analysis. At first, reports were based on water analysis tests and the positive coliform organisms reported were the signal for great agitation. The laboratory workers, erroneously evaluating these milk reports, spread the rumor that the milk samples showed the milk to be unsafe. The Veterinary Service, besieged by questions as to whether the milk was fit to drink, instructed each laboratory that its responsibility was not to interpret its individual tests but was to provide the Veterinary Service with information that could be coördinated with other laboratory reports, all of which would aid in determining the quality of the product. All reports were to be evaluated by the Veterinary Service which would recommend discontinuance of any plants deemed unsatisfactory and would take all necessary steps to correct the condition. This, like all of the other problems, finally was satisfactorily solved.

The individual dairies contributing to the total milk supply and the day of production were identified by numbering and lettering the milk bottle caps. In that way, a high plate count, high coliform content,

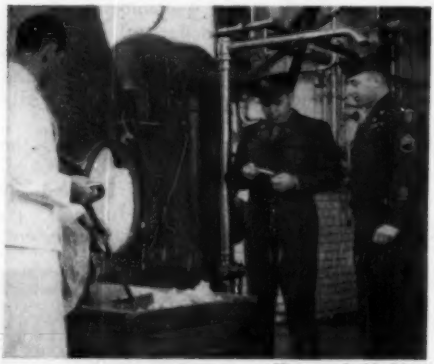
—Air Force Photo

Fig. 3—Veterinary Corps inspection of milk on C-54 during airlift to Berlin in 1949.

or other deficiency could be traced directly to the dairy responsible by reporting the bottle cap number to the supervising officer in Denmark. It was necessary to exclude several dairies but the present suppliers are excellent plants.

BUTTER AND CHEESE SUPPLIES

Cheese and butter purchased through the same agencies were not subject to the same adjustments that applied to milk but some practical problems had to be solved. Danish butter for export is usually packed in 112-lb. casks. However, this size package was not desirable for Army use in Germany. Arrangements were made for American purchases to be packaged in solid wood boxes containing 28, 1-lb. prints. Previous experience in shipping butter from Denmark to American troops had shown that butter, when kept in original containers (112-lb. casks or 28-lb. bulk boxes) and maintained at constant low temperature, was a much less perishable product than when printed in pounds. Previous experience also revealed that butter casks without additional metal strapping were incapable of withstanding the handling of railroad help and stevedores and the shifting in ship holds.



—Hammerschmidt Photo

Fig. 4—Veterinary personnel scoring butter being removed from churn at a modern Danish creamery.

The first butter that was purchased for the U. S. Army (just before the close of the war) in Denmark arrived in Antwerp and was shipped to Paris, there to be printed into 1-lb. packages. Because the keeping qualities were seriously impaired, a large percentage of that butter was utilized for cooking. Later efforts at buying Danish butter met with more satisfactory results. No printing was undertaken except that done by the Danish plant which produced it. Although the Danes did not originally have facilities to print all of the butter purchased, they did print enough to satisfy our needs and now deliver all the prints we want.

The Army procures a large quantity of butter in Denmark each week. It is of good quality and is manufactured entirely from sweet cream. All butter for export bears the "Lur" brand which is a government symbol of high quality (93 score or better). Unfortunately, butter of this quality does not hold its score for long periods and steps are taken to see that it is consumed as soon as possible after delivery.

Large quantities of Gouda, Steppe, and Swiss-type cheeses were purchased in Denmark, and while they were all of high quality, the average American much prefers Cheddar-type cheeses. The purchase of cheese in Denmark was, therefore, discontinued, although small quantities of Danish blue cheese are still procured for resale in commissaries. During the discussions preparatory to writing a contract, the possibility of procuring cheese made from pasteurized milk was discussed. The director of the commission would not sign a contract on that basis, because the old Danish cheese makers, like many in this country, believed that flavorful cheese could only be made with unpasteurized milk. He did, however, agree to purchase only cheese manufactured in certain areas (which happened to be islands) in which a system such as our "accredited area" prevailed and from which cheese safe for eating could be obtained.

CONCLUSION

The veterinary personnel stationed in Denmark find the work interesting. It is necessary to travel a great deal to accomplish their duty assignments and they see much more of Denmark than most Danes. The Danish dairy industry has cooperated in every way possible and places all their facilities at our disposal. The same may be said of the veterinary profession in Denmark. The quartermaster and transportation corps officers, with whom it

is our privilege to work, offer every consideration to our suggestions and proposals and it is our belief that this Danish procurement program is one upon which the Danish milk, cheese, and butter industries, and the United States Army can look with great pride.

A Warning

Veterinarians should be on their guard against book salesmen offering encyclopedias, dictionaries, etc., seemingly free or underpriced, but with provisions open to suspicion.

An AVMA member recently reported that such a salesman called on him, and on investigation, was found to represent a firm with a questionable reputation.

Listeria Monocytogenes in Liver of Pig Dying from Lye Poisoning

Each year more laboratories are reporting the presence of Listeria infections in new areas and in an ever-increasing number of susceptible species of animals.

Listeriosis of swine may assume several different forms. These vary from the encephalitis described by Biester and Schwarte,[1] the septicemia described by de Blieck and Jansen[2] and Rhoades and Sutherland,[3] to the presence of the organism in only isolated tissues as described by Slabosptis Kü[4] and Kerlin and Graham.[5]

Many veterinarians have suspected that apparently healthy animals may be carriers of Listeria and that, under certain environmental conditions, the organisms increase in pathogenicity and produce disease.

The following case can be used to illustrate a condition in which Listeria appeared to be present only as an apparently harmless contaminant.

On June 2, 1950, a swine producer submitted 2 dead pigs for diagnosis and gave the following history. His drove, consisting of 51 pigs weighing 40 to 50 lb. each, were penned in a barn. The previous day he had noted that some were sick. The morning of June 2, 6 were dead and 8 visibly sick. On postmortem examination, the snout and stomach were found to be severely burned. A diagnosis of lye poisoning was made. This was later confirmed. The livers of both pigs were cultured. From one a mixture of staphylococci and streptococci was obtained, while from the other a pure culture of *Listeria monocytogenes* was obtained.

This case and the one described by Kerlin and Graham[5] would indicate that Listeria may localize in the livers of swine without producing evidence of disease.—*F. M. Bolin, D.V.M., and D. F. Eveleth, Ph.D., D.V.M., Fargo, N. Dak.*

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The Results of Research

The following points are listed by J. L. Krider, Ph.D., Indiana, as being important to members of the American Meat Institute. The report was given at the annual meeting of the members of this Institute on Sept., 29, 1950, at Chicago. The points emphasized are: (1) fractionation of the life cycle into critical and noncritical periods; (2) determination of the residual effect of good nutrition; (3) the place and importance of vitamins; (4 the use and misuse of the antibiotic agents; (5) the importance of the trace minerals; (6) the use of synthetic diets for baby pigs; (7) the control of animal parasites; and (8) the growing use of hormones.

For continued success, four points will probably be important during the coming years. These are the use of production records, the increasing use of inbred lines, the common use of crossbred strains for commercial pigs, and the longer hog with less back fat.

In British experiments, treatment with potassium iodide was ineffective against the leucosis complex.—*Vet. Rec., July 22, 1950.*

Mechanical Aspects of Ear Treatment

W. W. ARMISTEAD, D.V.M., M.S.

Columbus, Ohio

THE VETERINARIAN'S treatment of otitis externa often fails for two reasons: (1) failure to thoroughly clean the canal before starting treatment; and (2) aggravation of an already-existing irritation by unwise manipulation or by the use of irritant medication.

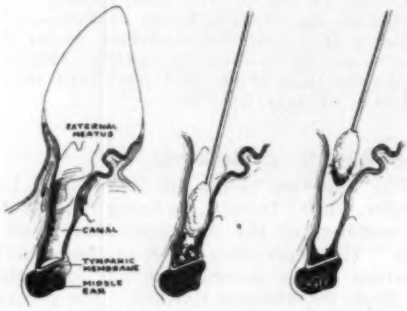

Fig. 1—A cotton swab often fails to remove debris from the bottom of the external ear canal. Besides tamping part of the exudate against the tympanic membrane, it usually irritates the delicate canal lining.

Because the external ear canal of the dog (and cat) is comparatively long, narrow, and tortuous, thorough cleaning without irritating is difficult. The often-heard recommendation that the canal be flushed out with an ear syringe is excellent because, if a mild solution is used, a minimum of irritation results. Unfortunately, however, flushing often fails to clean the ear completely—particularly in cases in which the debris is hard, crusty, or adherent. Attempts at removing this kind of debris are usually made with a cotton swab—in most cases, an unwise choice.

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A small cotton swab, carefully manipulated, is useful in removing purulent exudate or in cleaning the outer portion of the ear. However, this same cotton swab ordinarily fails to remove deeper, firmer material, and it abrades the canal lining, besides.

Figure 1 shows why a cotton swab is an inefficient instrument for removing dry or adherent exudate from the depths of the canal. In the first place, it is impossible to get the swab around or beneath the material to lift it out. Instead, repeated attempts only tamp down the material, making it more and more difficult to remove. Furthermore, continued use of the swab irritates, often actually denudes, the delicate canal lining.

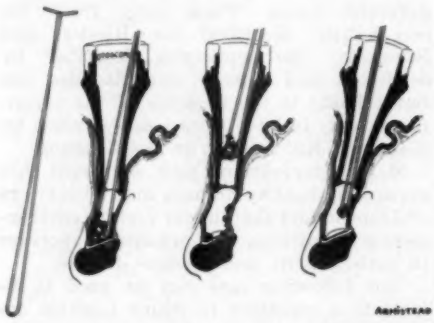

Fig. 2—A loop of small wire makes a safe and effective ear-cleaning instrument when it is used with an otoscope.

Sometimes a dog with no visible inflammation or infection in his ear will shake his head because of a plug of dried "wax" which rattles and annoys him. Since repeated probings with the cotton swab not

only fail to remove this material but irritate the ear as well, these cases usually grow steadily worse under the swab treatment. Each time the dog is brought back, the ear is visibly more inflamed and perhaps moist with exudate. Otitis patients which seem to grow worse with treatment are familiar to most practitioners.

Figure 2 shows how a simple loop of small-gauge wire may be used to clean the external ear canal. (The smallest gauge "high treble" piano wire is excellent for making these loops, as well as for replacing the loops on tonsillectomy snares.) The smooth wire loop will not only pass beyond and beneath a plug of exudate, but can be used, also, to remove small bits of debris from the wall. Its use in removing dried material from the ear corresponds to the use of a loop to remove a cork from the inside of a bottle. By using an otoscope through which the wire loop is passed and watched, the clinician can completely and safely clean the dog's ear. And complete, gentle cleaning is more important than medication.

Following are ten points which may help to improve one's technique for ear cleaning and treatment:

1) Never attempt to clean a dog's ear without adequate restraint. Cleaning can be neither gentle nor complete unless the dog remains perfectly still. In order to do the job safely and well, even a gentle dog should be anesthetized—especially for the first treatment. Pentothal sodium is ideal for this purpose. In some cases, more prolonged anesthetics, such as pentobarbital sodium or sodium amytal, may be preferred (*see* (2), below).

2) The dog's ear canal can be made more accessible by laying the animal on its side with the affected ear up. Then, by pulling the conchal flap directly upward, perpendicular to the table top, the external ear canal is straightened, making it easier to see and to clean without irritating the walls. If drainage is desirable, the dog may be allowed to lie with the affected ear down while he recovers from the anesthesia. To soften the exudate or to prolong medication, the affected ear may be turned up while the dog recovers from the anesthetic.

3) Never attempt to clean or treat a dog's ear without an otoscope. The practice of mopping and flushing "until nothing comes out" can not be too strongly condemned. The external ear is clean only when you can see that it is clean—down to the tympanic membrane. Foreign bodies and parasites are often overlooked completely when no otoscope is used. An otoscope with a speculum so short that the tympanic membrane can not be seen is almost useless.

4) The first step in cleaning the ear should be to trim away all hair in and around the external meatus. Hair in this area obstructs the view of the canal, collects exudate, fosters infection, and impairs ventilation. Because it keeps the bottom of the canal moist, lack of ventilation is a major cause of otitis.

5) If the material in the ear is dry and hard, it should be softened with some bland fluid such as glycerin before attempting to remove it. Digging out dry, adherent exudate causes unnecessary damage, just as does removal of an adherent, dry scab from a wound. In some cases, it is advantageous to allow this softening fluid to remain in the ear overnight before attempting to remove the debris.

6) In using the wire loop, be sure to hold it loosely and with the upper end free (as a pencil is held), so that a sudden movement of the dog will not cause damage to the tympanic membrane. The loop should be used only through a lighted otoscope. Blind "fishing" defeats the purpose and is hazardous.

7) Medication is not always needed following the removal of dry ear exudates. Where some inflammation exists, or in the case of minor infections, a few drops of furacin solution (Eaton) may be of value. Ordinarily, irritant antiseptics or heavy ointments should be avoided.

8) Sometimes exudative debris may be loosened and softened enough for removal by washing with a mild antiseptic solution. With the dog on his side, the conchal flap of the affected ear is stretched upward as described in (2), above. The solution is then poured into the ear and the canal is massaged from the outside with the thumb at the base of the ear. The canal should be massaged only upward, *away from* the tympanic membrane, to avoid the possibility of injury or of spreading infection to the middle ear. By this process, much

debris is loosened and floated to the surface of the solution from which it may then be wiped away. Cotton may be used to soak up the excess solution from the canal and the process may be repeated. The job may be completed with the wire loop and otoscope.

9) Probing or swabbing should be kept to a minimum. Flushing and visually directed "fishing" should be substituted whenever possible. The appearance of blood on a swab or an instrument used in the ear is not a sign to stop treatment; it is a sign that the operator *already has gone too far.*

10) Overtreatment is probably as great a hazard in otitis externa as in any other disease. After careful, thorough cleansing, little medicinal treatment is needed in the majority of cases. Furthermore, as the condition of the ear begins to improve, treatments should gradually be spaced further apart.

Listeria Monocytogenes Associated with Bovine Abortion

L. C. FERGUSON, D.V.M., Ph.D.; E. H. BOHL, D.V.M., M.S.; and W. L. INGALLS, D.V.M., M.S.

Columbus, Ohio

A bovine fetus was submitted for bacteriologic diagnosis in November, 1948. There was a history of abortion by a grade heifer in her first pregnancy. The heifer had been pasture bred, but judging from the size and development of the fetus, the pregnancy was of about five months' duration. There was a brownish uterine exudate at the time of the abortion. The history included references to a suspected injury of the heifer a few weeks prior to the abortion, following which the heifer became unthrifty. At the time of delivery of the fetus or during subsequent uterine medication, a uterine injury resulted in a peritonitis and septicemia from which the animal died.

The stomach contents of the fetus were cultured on a tryptose agar medium containing 5 per cent horse blood. Examination after forty-eight hours incubation in 10 per cent carbon dioxide at 37 C. revealed numerous small colonies on the medium in essentially a pure culture. This organism was studied culturally and was tentatively identified as *Listeria monocytogenes.*

In February, 1950, the information was being compiled for a report of this unusual etiology of bovine abortion when a second case was recognized. This abortion occurred in a herd of 50 Hereford heifers which had been shipped from Canada in the fall of 1949. One of the heifers aborted but no examination was made. When the second abortion occurred, the fetus of approximately 7 months was presented for diagnosis. The stomach contents were examined microscopically and culturally. No Protozoa were found microscopically, but on dark field examination, motile, rod-shaped bacteria were seen. Cultures on tryptose blood-agar medium from the stomach contents revealed many small colonies which resembled *L. monocytogenes.*

In each of these cases, the organism isolated was studied in detail. The procedure included demonstration of a small, motile, gram-positive rod, which possessed characteristics of *L. monocytogenes* as described in Bergey's Manual.[1] In addition to the cultural and biochemical studies, the organism was used to inoculate mice and the eye of a rabbit. The mice died in two to four days after intraperitoneal inoculation and the typical bacteria were recovered. Also, a suspension of the pure culture from each aborted fetus was instilled in the conjunctival sac of rabbits. In both cases, the rabbits responded, in twenty-four to forty-eight hours, with a mucopurulent exudate which contained many mononuclear cells and numerous *L. monocytogenes.* This procedure was described by Julianelle[2] as a simple diagnostic aid in the identification of Listeria.

The only previous report in this country, known to the authors, in which Listeria has been associated with bovine abortion was that of Graham *et al.*[3] However, there have been reports from other parts of the world on the occurrence of Listeria in aborted fetuses. Paterson[4] described an outbreak of abortion in ewes in England in which 16 of 32 yearlings aborted. Of 4 fetuses examined, 3 revealed the presence of Listeria in the stomach contents. The organisms

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The assistance of Drs. V. Tharp and H. E. Amstutz in obtaining information on the clinical aspects of these cases is gratefully acknowledged.

isolated were used to inoculate experimental animals and, although no symptoms were observed following repeated oral administration, abortion regularly followed intravenous injections of the various strains of Listeria. The organisms were readily demonstrated in the aborted fetuses and in the uterus of the ewes slaughtered immediately after abortion. Ewes slaughtered twenty-one days after abortion revealed no gross pathology and Listeria could not be demonstrated.

Olson[5] reported on the incidence of Listeria and Streptococcus in the fetal membranes and in aborted fetuses observed in the Veterinary Institute in Stockholm. In 7 cases, 6 cows and 1 sheep, *L. monocytogenes* was cultivated—in 3 cases from the fetal membranes, in 2 cases from the fetal stomach contents, and in the remaining 2 cases from both the membranes and the stomach contents. Although this work was done on aborted fetuses, Olson[5] suggested that Listeria and Streptococcus may be present at normal birth.

The etiologic significance of *L. monocytogenes* in bovine abortion may very well be questioned. Certainly, Paterson's report[4] indicates that Listeria may cause abortion in ewes when injected intravenously. However, his failure to transmit the infection by oral administration emphasizes the importance of portal of entry of the microorganisms. An evaluation of the available information on the epidemiology of listeriosis suggests that the organism may be an opportunist capable of producing diseases under certain rather restricted conditions.

Careful examination of the herd history, in connection with the second case reported in this paper, would tend to support this suggestion. Prior to the time this herd of Hereford heifers was turned to pasture, there were 3 normal calves born and 6 abortions. Of the aborted fetuses, 3 were examined bacteriologically. Listeria was demonstrated in 1 case, while in the other 2 no microörganisms were found. These cattle were considered thin and unthrifty when purchased by the owner the previous fall and after being wintered chiefly on hay of average quality, the general condition was fair. It was concluded that the low nutritional state of the heifers may possibly have been responsible for the abortions, and mineral and vitamin supplements were then included in the rations.

In the first case reported here, there was a history of apparent injury in the cow, with a progressive loss of condition prior to the abortion. Therefore, in both of the cases in which *L. monocytogenes* was isolated from the aborted fetus, there were circumstances which might lead one to conclude that there were in each case some factors in addition to this bacterium which may have been involved. There have been no reports of the typical encephalitic type of listeriosis in either of the herds.

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Bovine Infertility.—Bovine infertility concurrent with regular estrous rhythm is nearly always due to endometritis, salpingitis, and cervicitis, says Brickert (*These*, Paris, 1949). The cause of sterility associated with irregular estrus may be derangement of the endocrine system, particularly hypofunction of the anterior pituitary due to faulty elimination.

Garm (*Cornell Vet., 39*, 1949), reviewing the various theories on the etiology of ovarian cysts in cows, concludes that the strain of heavy lactation on the endocrine system related to reproduction is the basic factor.

New Anesthetic for Horses

A new short-acting intravenous anesthetic agent for the horse is *B*-naphtoxyethanol.* Three aspects of the new anesthetic should prove unusually interesting: (1) It is injected intravenously as a particulate suspension; (2) its action on the nervous system in the horse is one of ascending anesthesia rather than descending loss of nervous function; (3) its effect on the nervous system varies considerably in the different animal species.—*Vet. Rec., Aug. 26, 1950.*

*This product is sold as "anavenol" by Imperial Chemical (Pharmaceuticals), Manchester, Eng.

Diabetes Insipidus in the Dog

S. POLLOCK, D.V.M.

South Orange, New Jersey

The patient, a 10-year-old, unspayed mongrel Terrier, was presented to the hospital on March 22, 1950, because of a growing mass in the abdomen. For the past three months, the owner reported that the dog drank large amounts of water and acquired a lethargic attitude, associated with an insecure sense of locomotion.

Physical examination revealed an obese, 40-lb. bitch. The skin was unthrifty and puffy, especially around the eyes and muzzle. The pupils reacted normally to light and the fundi appeared normal. Auscultation of the chest failed to explain the occasional harsh cough, unassociated with exertion. Heart sounds were free from murmurs. The liver and spleen were not palpable, but the apparent fullness of the abdomen noticed by the owner could be attributed to the several large, hard, circumscribed pendulous mammary tumors. No mass was felt in the rectum. There was no remarkable finding with respect to the extremities.

Laboratory Findings.—The laboratory findings were as follows:

Hemoglobin 90 per cent; red blood cells, 6,980,000; white blood cells, 13,300; polymorphonuclear leucocytes, 55 per cent; lymphocytes, 40 per cent; monocytes, 3 per cent; eosinophils 2 per cent. Size, form, and staining of red cells normal. Urinalysis — clear, pale yellow, acid, albumin 1+; sugar, negative. Specific gravity, 1.004. Microscopically, an occasional squamous epithelial cell was seen, but no pus, blood, or casts. Stool examination was negative for ova or parasites.

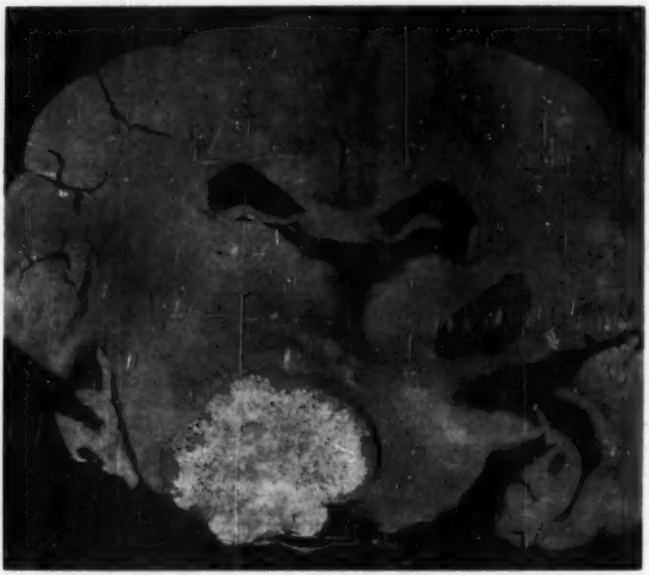

Fig. 1—Cross section of brain. Lesion occupies hypothalamus and part of thalamus.

On the basis of the polyuria, low specific gravity, and polydipsia which was verified as 3,000 to 3,500 cc. per day, a therapeutic test with posterior pituitrin for diabetes insipidus was instituted. For three weeks, 1 cc. of posterior pituitrin was administered daily with a resultant drop in water intake that ranged from 1,080 to 2,670 cc.

The persistence of the abdominal distension, coupled with the partial yet undramatic response to pituitrin, prompted a request for an exploratory laparotomy,

From the South Orange Veterinary Hospital, South Orange, N.J.

which was granted. No overt pathology was found since the liver, gall bladder, spleen, and genito-urinary system appeared palpably normal. Apart from an excessive storage of adipose tissue in the omentum and perirenal area, nothing unusual was recorded.

The possibility of a hypothyroid function prompted further laboratory investigation, since myxedema is manifested by a low metabolic rate, thick puffy appearance of the skin, apathy, slow cerebration, increased body fat, and hypercholesterolemia.[1] On April 22, 1950, the Clinical Laboratory* reported nonprotein-nitrogen 35.3 mg., cholesterol 666 mg. (normal cholesterol 125 to 250 mg.).[2]

As all the criteria excepting the basal metabolism were satisfied, thyroid (¼ gr.) was incorporated daily with the posterior pituitrin therapy. On May 19, 1950, a re-check of the cholesterol showed it to be down to 330 mg., but unfortunately the clinical picture was not similarly improved. Instead, the patient became progressively more apathetic, reeled around in circles, and consumed more water than previously. Finally, on June 6, 1950, euthanasia was requested. Prior to death, another blood sample was collected with the following results: nonprotein-nitrogen 28.3 mg., creatinine 2.4 mg., cholesterol 278.0 mg., hemoglobin 80 per cent, red blood cells 7,500,000, white blood cells, 11,000; sedimentation rate 2 mm. in sixty minutes.

Autopsy Findings.—The autopsy findings were as follows:

Large, firm, nodular mammary tumors involving three breasts were noted and appropriate sections taken.

Apart from a small firm tumor at the bifurcation of the trachea, the chest was essentially normal.

The kidneys were normal, the capsules stripped with ease, and the corticomedullary ratio was normal.

A small tumor was noted in the right adrenal gland.

The entire brain plus sections of all viscera were submitted to the Armed Forces Institute of Pathology. Grateful acknowledgement is respectfully made to Lt. Col. T. C. Jones, V.C., for the following report and comment.

*The Clinical Laboratory, Lincoln Park, Newark, N.J., I. R. Asen, director.

Gross.—When the fixed brain is incised, a lesion approximately 1.5 cm. in diameter is noted just dorsal to the tuber cinereum. The lesion is grayish in color with a central area which is yellowish and has a granular consistency. It is approximately in the midline, but extends more to the right. It occupies the hypothalamus and part of the thalamus, and apparently displaces part of the internal capsule. The rostral limit of the lesion is approximately at the anterior commissure. Caudally the lesion extends through the midbrain, but apparently does not involve the pons. A few brownish foci are seen in the white matter of the cerebellum.

A circumscribed gray nodule in the center of an adrenal, about 7 mm. in diameter, is observed. It appears to displace most of the medulla.

Microscopic.—Mammary Tumor.—The typical cells are large, polygonal, and hyperchromatic. They have large round to ovoid vesicular nuclei containing prominent nucleoli. In some areas these cells are arranged in anaplastic masses with no regular orientation. In such areas, some cells are much larger than others and mitotic figures are numerous. In more differentiated areas, these cells form acini which contain an acidophilic material, presumably a secretion. The stroma of the tumor is abundant in places, apparently stimulated. In places there are large hemorrhages. Some phagocytes in the stroma contain a brown pigment. The tumor has invaded skeletal muscle causing it to become necrotic.

Tumor from Bifurcation of Trachea.—This is similar to the anaplastic parts of the mammary tumor. In a few areas, however, there is a tendency toward formation of acini, with a suggestion of secretion. Parts of the tumor are necrotic, with deposition of basophilic salts, presumably calcium, in some areas. Another section of the lung contains no tumor; no significant lesions are seen in it except some areas of anthracosis.

Adrenal.—An area of the medulla of one adrenal is infiltrated with tissue similar to the mammary tumor. The other adrenal has in its center a mass of cells that resemble the cells of the adrenal cortex. This mass displaces both medullary and cortical tissue. It is interpreted as an adenoma of the adrenal cortex.

Cardiac Muscle, Kidney, Spleen, Artery, and Pancreas.—No significant lesions are seen.

Liver.—Some diffuse fatty change.

Lymph Node.—No significant lesions in this tiny nodule. A few phagocytic cells in the medulla contain a brown pigment.

Pituitary.—The small piece of tissue submitted as pituitary gland is a fragment of tumor.

Brain.—The large lesion noticed during the gross dissection in the hypothalamus and thalamus is similar in appearance to the mammary tumor.

Diagnosis.—(1) Adenocarcinoma, mammary gland, canine, with metastases to the lung, adrenal, and hypothalamus. (2) Diabetes insipidus, resulting

from metastatic adenocarcinoma in hypothalamus. (3) Adenoma of the adrenal cortex.

Comment.—The diabetes insipidus syndrome is indicative of a lesion in the posterior lobe of the pituitary, the pituitary stalk, or the hypothalamus which lies directly dorsad. This syndrome is, of course, a disturbance of water balance believed to be caused by a failure of the posterior pituitary gland to secrete its antidiuresis hormone. In the absence of that hormone, the kidney fails to resorb a normal amount of water but does resorb much salt. The result is elimination of large amounts of urine of very low specific gravity.

Your injections of posterior pituitary extract apparently did decrease water consumption and add evidence in favor of your diagnosis of diabetes insipidus. It is probable that such injections at shorter intervals (for example, every three or four hours) for a few days would have resulted in a more marked remission of the polyuria. Such injections are useful only as a diagnostic aid, of course, since the hormone acts only for a short time.

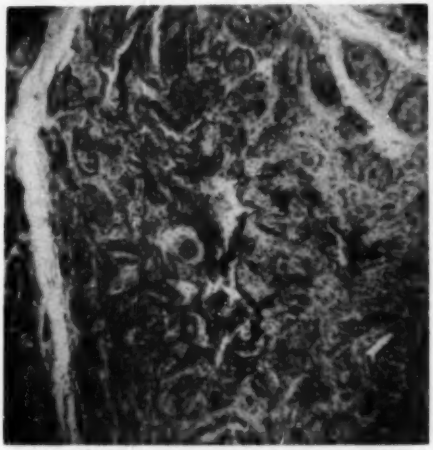

Fig. 2—Breast. The typical cells are large, polygonal, and hyperchromatic. x 160.

DISCUSSION

V. P. Collins, M.D., in his paper,[3] "Effects of Destruction of Hypothalamus by Tumor," traces the clinical and pathologic sequels of a slowly growing tumor in the third ventricle of an unmarried 28-year-old woman. This patient, a proved case of diabetes insipidus, exhibited a lethargy and leg weakness that closely paralleled our canine counterpart. Dr. Collins' rationalization of the symptomatology is worth quoting:

"Disturbances of sleep, such as the lethargy which was so prominent a feature in the last few months of the patient's illness, have been associated with the pathological processes of the region of the third ventricle since Von Economo's work on encephalitis lethargica. Cushing describes the gliomatous lesions involving the walls of

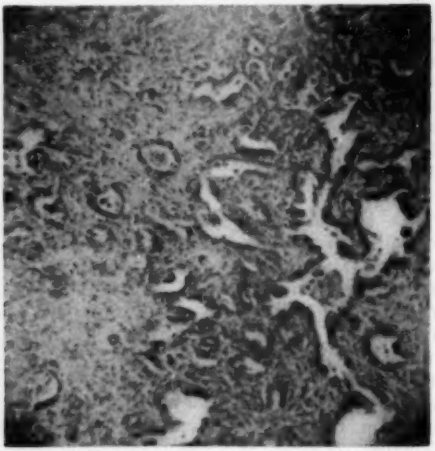

Fig. 3—Adrenals. Cells form acini which contain an acidophilic material. x 160.

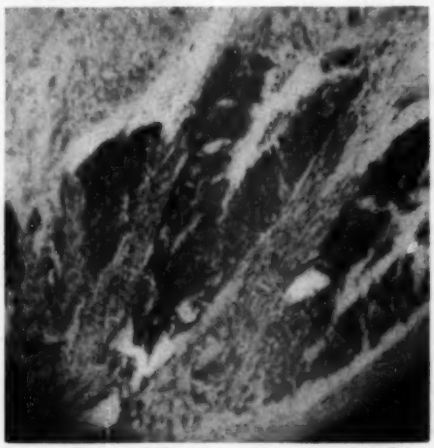

Fig. 4—Brain. Cells in anaplastic masses with no regular orientation. x 160.

the third ventricle as a form of brain tumor associated with hypersomnia.

"The girl's appetite was described as ravenous by her family and her increasing adiposity paralleled the development of the hypothalmic lesion particularly in the late stages."

In retrospect, the misconstrued myxedema can be explained in the light of adiposity associated with lesions of the hypothalamus. The steady decline of the patient on thyroid therapy is understandable because Keller states[4] that in the hypophysectomized diabetic dog, polyuria is resumed on administration of anterior pituitary extract or thyroid powder. An explanation for the drop in blood cholesterol is probably associated with thyroid therapy.

SUMMARY

1) A clinical case of diabetes insipidus in the dog is described which satisfies the criteria of polyuria, polydipsia, low specific gravity, and a response to posterior pituitrin.

2) Autopsy findings were confirmed by the Armed Forces Institute of Pathology as diabetes insipidus secondary to adenocarcinoma of the breast.

3) A comparison is made of the symptomatology of diabetes insipidus in a human being with that of the canine animal.

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Cortisone Retards Healing

Cortisone retards the formation of granulation tissue in laboratory animals and human beings. It also slows, but does not stop, epithelization and the healing of fractures (*Surgery*, Aug., 1950:177-181, abstr. in *The Cortisone Investigator*, Oct. 15, 1950).

Board Splints that Fit

Prompt and proper healing of fractures of the femur often depend upon proper application of board splints. This, in turn, depends upon proper shaping of the splint so that it will fit the size and shape of the leg to which it is applied.

Fig. 1—Tracing outline of leg of dog on glass for pattern of board splint.

To facilitate the proper construction and application of the splint, I suggest the use of a glass plate or a sheet of plexiglass which, when placed on the lateral surface of the leg, makes it possible to trace the outline of the entire leg with crayon or waxed pencil. From the glass, the outline is transferred to paper. Then the paper is cut out on these lines and placed on the board or wood to be used for the splint. This insures the final cutting will be what is required by the leg so that the board will fit properly on the shape of the thigh and the lateral surface of the hip. When so fashioned and applied, the splint will hold the fractured ends in apposition and they will heal promptly.—*A. A. Barry, D.V.M., Lynn, Mass.*

Fertility in Cows.—Fertility increased with the length of the postpartum interval to first service up to 100 to 120 days in a study of 1,674 pregnancies in 593 cows of the University of Illinois dairy herd.—*J. Anim. Sci.* (*Aug., 1950*).

The gateway to successful surgery is infinite fidelity to small details.

The Harderian Gland of the Dog in Chronic Ectopia

A Case Report

H. J. WERNER, Ph.D., and J. H. ROBERTS, Ph.D.

Baton Rouge, Louisiana

A SURVEY of the literature reveals that, at least until recently, the harderian gland received, at best, casual mention. It is interesting to note that opinions vary, both with regard to the types of glandular cells which are present and with reference to precisely which animals possess them.

Fig. 1—Normal stratified squamous epithelial covering. x 167.

LITERATURE CITED

The work of Grafflin[2], and the men to whose investigations he refers, indicates that the gland and its reactions to various drugs has considerable experimental clinical value. Reighard and Jennings[6] write, ". . . at the medial angle of the eye is a large nictitating membrane (membrana nictitans) or third eyelid, corresponding to the plica semi lunaris of man. In the cat it is supported by a broad central strip of cartilage passing from its edge to its inner angle, and the inner end of this cartilage is surrounded, on the medial (concave) side of the membrane, by the large lobulated harderian glands." Hyman[5] mentions the gland twice: first, "The internal surface of the nictitating membrane of the cat will be found to be roughened because of the presence of the harderian gland in its wall;" and second, ". . . in the rabbit, the harderian gland is situated medial to the infraorbital salivary gland and extending beneath the eyeball. It pours its secretion onto the nictitating membrane." Sisson[7], in reference to the eye of the pig, says, ". . . in addition to the gland which surrounds the deep part of the cartilage, there is a deeper gland of Harder (glandula palpebrae tertiae profunda)." The same author in reference to the dog's eye states, ". . . the gland

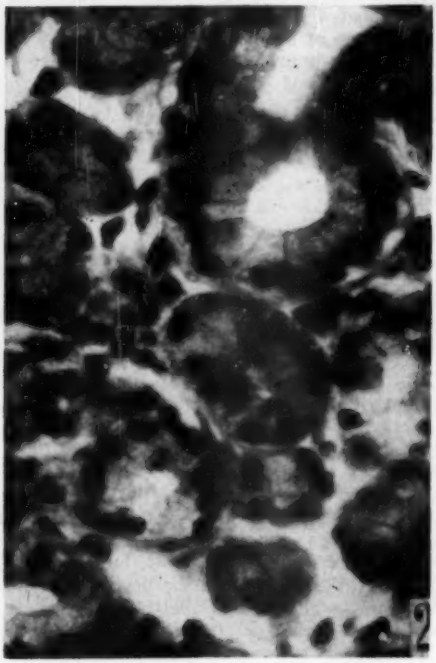

Fig. 2—Types of glandular cells. x 710.

From the Department of Zoölogy, Louisiana State University, Baton Rouge.

The authors appreciate Miss Terry Pullig's friendly coöperation.

which surrounds the deep end of the cartilage (and one may assume that the harderian gland is under discussion) of the third eyelid is a mixed gland." In yet another part of the text, Sisson (*loc. cit.*) says in reference to the eye of the horse, ". . . the deep part of the cartilage is surrounded by a gland which resembles the lacrimal gland in structure." Topographically, the references pertain to the harderian gland; consequently, one of two conditions must exist: either the harderian glands are histologically different in the dog as compared with the horse, or else confusion prevails as to the type of cells which are present in these glands. In the revised edition of Sisson and Grossman[3], the gland of Harder is specifically mentioned in the discussion of the eye of the pig, and implied in the case of the horse; but no mention is made of the gland in either the dog or the cat. From this brief survey, it is evident that the harderian gland is present in various animals. Wilder and Gage[2] sum this up nicely when they say that Harder's glands are found only in animals possessing a third eyelid.

Various names are given the condition under consideration here. Kirk[4] calls it ectopia, cherry eye, luxation of the harderian gland, or tumefaction of the membrana. He also says that he has not observed this condition in cats, but that it frequently occurs in dogs. In ectopia, the gland of Harder, normally situated on the inner surface of the haw, becomes enlarged and reddened and makes its appearance outside of the free surface of the tissue.

MATERIALS AND METHODS

The harderian gland of an 18-month-old Cocker Spaniel was fixed in aceto-Zenker's solution, washed, dehydrated with ethyl alcohol, embedded in paraffin, and serial sections were cut at 5 μ (microns). The following stain techniques were used: Harris' hematoxylin with an alcoholic eosin counterstain; Heidenhain's modification of Mallory's connective tissue stain;[5] the Feulgen reaction with a fast green counterstain; and Lillie's[6] iron hematoxylin and metachromatic dye. The first method was used for generalized inspection of the tissue; the azan method (Heidenhain's modification), because it brings out in vivid relief the connective tissue components of a gland; the Feulgen reaction, as an aid in detecting chromatin patterns and mitotic figures; and the metachromatic dye, because it is specific for mucin. Portions of the cartilage of the adherent nictitating membrane were invariably present in the sections, and a brilliant orange stain of the cartilage served as a criterion of the effectiveness of the dye.

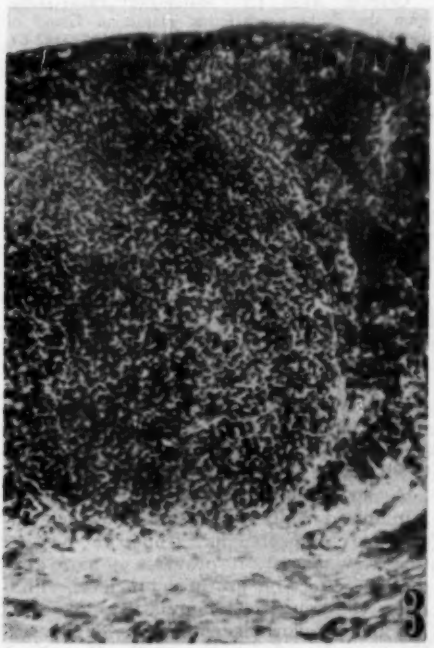

Fig. 3—Section through the epidermis. Carcinoma nodule. x 167.

Fig. 4—Section through the epidermis. Concentrically disposed cells of the carcinoma. x 217.

DISCUSSION

The gland was surrounded by a layer of stratified squamous epithelium (fig. 1). Beneath this was a definite layer of connective tissue from which delicate septums extended inward. These septums surrounded the blood vessels, ducts, and secretory portions of the gland. Grafflin[2] describes the cells lining the glandular end-pieces in the harderian gland of the rat as being of two types, "principal" cells and "clear" cells. Such was the case in the dog here reported (fig. 2). The clear cells (pure serous) were negative in reaction to the mucin test. The principal cells were the more abundant type present. These cells, which were mucoserous, gave a varied positive staining reaction for mucin. The boundaries were less distinct than the boundaries of the clear cells. The cytoplasm of the mucoserous cells was visibly granular, the nuclei were spherically shaped and centrally and basally situated. The cells of both types were arranged in a layer against the basement membrane with their free ends directed toward a small oval lumen. An occasional basal cell could be seen between these secreting cells and the basement membrane. All of the cells were roughly cuboidal in shape.

The case was presented for study on Feb. 1, 1950, when the unilateral ectopic condition had existed for fifteen months. Periodically, astringent treatments were tried, but to no avail. Our histologic findings were of such a nature as to warrant the postulation of a benign (used in the sense that metastases had not occurred) epidermoid carcinoma as being the probable etiologic agent. Figure 3 shows a section taken through a nodule of carcinomatous cells. At various loci along the stratified squamous epithelium of the gland, similar packets of cells can be observed. The proliferation of the carcinoma began in the rete malpighii. Relatively little differentiation of the cells can be observed. New cells are added at the periphery to the old ones in the center, and because of this the characteristic, concentric groups of epithelial cells are formed, called "epithelial pearls" (fig. 4). Here the cells which form the pearls are quite compact, but they are not always welded together to form a cornified center. A marked infiltration of both lymphocytes and polymorphonuclear leucocytes can be seen. Mitotic figures are numerous, and hemorrhagic areas are common. Mucoid degeneration of the derma was evident in the region of the carcinoma.

SUMMARY

The harderian gland is surrounded by a layer of stratified squamous epithelium. Beneath this layer is a band of connective tissue from which septums extend inward dividing the gland into lobules.

Two types of cells are present—the clear cells (pure serous variety) and the principal cells. The latter are more numerous. Only the principal cells react (although never in a constant fashion) to specific tests for mucin. They are mucoserous cells.

An epidermoid carcinoma is postulated as being the etiologic agent in this case of a unilateral chronic ectopic condition of the harderian gland.

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Tromexan, New Anticoagulant

A new anticoagulant which may be administered orally is now available for clinical use. Marketed as "tromexan" (Geigy Co., New York), it provides a more predictable effect on prothrombin level, eliminates the dangerous cumulative effect, and has more favorable potency : toxicity ratio, according to studies at the New York Medical Center, of Cornell University.

Notes on Equine Breeding

Although the ninth day after foaling is sometimes safe for breeding a mare, it cannot be used indiscriminately. Anyone who has glanced through a speculum and observed the hemorrhage and discharge occasionally present in the uterus will realize that blind use of this date is dangerous. A mare whose placenta weighed less than 14 lb. and was expelled in three hours or less can be bred on the ninth day, other conditions being normal.

• • •

If a mare has a long heat period early in the breeding season, she should be allowed to go out of heat, and be bred during the following heat.

• • •

A double cover by the stallion may give about a 3 per cent better chance of getting a mare in foal, but the opportunities for infection also are increased.

• • •

It is not definitely known that estrogen will produce ovulation.

• • •

It is not wise to puncture an ovarian cyst in a young mare.

• • •

Constant estrus in fillies at the racetrack is sometimes blamed on ovarian trouble, but it may be of nutritional origin or the result of confinement under unnatural conditions.

• • •

One seldom finds a mare without cysts. Mares will submit to breeding at any time of the year and cysts may be normal at any time of year. If a mare has cystic ovaries, she should be sutured or clamped at estrus or after foaling to avoid irritation.

• • •

What are sometimes thought to be ovarian disturbances may actually be the product of an endocrine imbalance.

• • •

On a several-year average, 77 to 83 per cent of the mares on well-managed farms should become pregnant, but a drop to 65 per cent is not unusual in a year when many outside mares are bred.

From a talk given at the Saratoga (N.Y.) sales pavilion, Aug. 12, 1950, by Dr. Myron G. Fincher, New York State Veterinary College. A digest of the address was published in The Blood-Horse, Sept. 16, 1950.

Barrenness in the mare may be simply an indication that she is not up to the job of bearing and rearing a foal every year. —*Blood-Horse, March 25, 1950.*

Electroplectic Anesthesia

Electroplectic anesthesia is also called electroplexy or electric stunning. Although known for many years and widely used in the abattoir, it has been recently introduced into the current literature only because Freeman (1949) described it in the two-stage operation of transorbital leucotomy in man.

In a plea for a more extensive use of the procedure, E. O. Longley (*Brit. Vet. J.*, July, 1950: 250-266, and Aug., 1950: 283-292) lists the following special purposes for which it might serve:

1) As the sole anesthetic for brief procedures of all kinds.
2) For the induction of general anesthesia, preliminary to maintained anesthesia by ordinary chemical means.
3) For immobilization in radiography.
4) For ophthalmoscopy.
5) For physical examinations (abdominal palpation).
6) For handling and controlling dangerous patients.
7) Exceptional as a simple sedative.
8) For introductory anesthesia in captive wild animals in menageries.
9) For euthanasia.

Penicillin in Pyemic Arthritis of Foals, —Clouet (*Rev. Méd. Vét,* March, 1950) attributes the failures of penicillin therapy in so-called navel ill to under dosage. Doses of 50,000 O.U. every three hours until 1,600,000 units had been given brought sensational recoveries, whereas half that dosage frequently failed.

We must ever strive to become more efficient, and competition is the best incentive.

AVMA Membership Cards Will Be Delayed Due to New System

After you have remitted your 1951 dues, it may be several weeks before your 1951 membership card reaches you. A new system of issuing these cards requires processing in multiples of 1,000, or more, at intervals of several weeks. This system was adopted to meet the growing workload of the central office—so please bear with us if your card does not come as soon as expected.

The Veterinarian and the Breeding and Raising of Domestic Animals

Dr. Lagerlöf's talk at the Congress was developed in answer to a direct question: "How can the veterinarian be of greater service to the livestock industry?" The reply to this question comes in four parts: eradicate tuberculosis, control and eliminate brucellosis, reduce the incidence of mastitis, correct infertility. All of these items revolve around the prevention of cattle diseases, which will insure a longer and more fertile life for all domestic animals.

The paper was devoted almost entirely to a discussion of reproductive problems and again was divided so as to provide answers to three direct questions:

1) Which breeding problems will be of current interest to the veterinarians during the next few years? The answer suggests these will be of three general types: congenital or hereditary, acquired or environmental, and combinations of these. Also considered in this connection is the position to be assumed by the veterinarian in the program for artificial insemination which is growing rapidly in many parts of the world.

2) What possibilities have we of solving these problems? In answer, he concludes that it will be necessary to teach the subjects to the students in the colleges and to encourage continuation and enlargement of the research program. He says, "It is no longer enough that a few veterinarians have specialized on this subject; now all veterinarians who are going to work with cattle must necessarily have good knowledge and practical experience concerning reproductive problems, and this requirement becomes more pressing each year." He also urges that all veterinary medical authorities participate in the problem at hand and immediately set about introducing the necessary improvements.

3) What can we do to help the veterinarians to render the best possible service to animal farming? In reply, Dr. Lagerlöf suggests establishment of an independent professor's chair of obstetrics and gynecology at each college of veterinary medicine. Such a chair, and the department which it heads, should be supplemented with a stationary and an ambulatory clinic, and the appropriate laboratories to process materials submitted to these clinics for attention.

Notes from a talk by Professor Nils Lagerlöf, Royal Veterinary College, Stockholm, before the Fourteenth International Veterinary Congress, London, 1949.

—*Rocky Mountain News*

Oldest Equine Mother

A 35-year-old mare, Beau Geste, with her colt at side, is believed to be the oldest equine mother in the Rocky Mountain area, according to George Kruse, manager of Brookvale Ranch, Evergreen, Colo. The colt was wholly unexpected as the mare was not in good condition and the pregnancy was thought to be "a little gas or something."

Fertility of Bulls.—Maintaining a high fertility rate is essential to the economic working of an artificial insemination center, and it is a major responsibility to the farmers using the service.—*Vet. Rec., Aug. 26, 1950.*

Vibrionic Abortion.—Abortions caused by *Vibrio foetus* occurred between two and one-half and eight and one-half months of pregnancy in a group of 24 cows examined by B. B. Morgan, Ph.D., and coworkers at Wisconsin. These animals were negative for brucellosis and trichomoniasis.

Mineral mixtures have not had any "beneficial effect whatsoever in raising the resistance of a group of cows to Brucella infection", according to experiments at the University of Wisconsin.

The preparation of beef animals for general anesthesia must include fasting and emptying of the digestive tract.—*A. G. Danks, D.V.M., New York.*

CLINICAL DATA

Clinical Notes

The importance of the rumen in the health of the animal may begin in the very young calf.—*W. D. Pounden, D.V.M., Maryland.*

Effective preventive measures against swine influenza are: clean, dry, warm houses, with plenty of bedding; and preventing pigs from rooting. There is no specific vaccine or serum for swine "flu."

According to Huddleson (*J.A.V.M.A.*, Oct. 1949), Brucella survive for two years in cheese, and 80 per cent of American cheese is made from raw milk. Pasturization irons out the problem.

Coccidia in chickens interfere with the ability to use sugar and they disturb the temperature-control mechanism, the metabolic rate, the muscle contraction, and muscle nutrition. The actions may explain the loss of appetite, the rapid loss of flesh, and the great muscular weakness which is characteristic of cattle suffering from coccidiosis.—*C. A. Herrick, Ph.D., Univ. of Wisconsin.*

Aureotracin.—The reaction of aureomycin and bacitracin in aqueous solution produces a substance which possesses antibacterial properties. It is less nephrotoxic than bacitracin, is effective against the organisms ordinarily affected by aureomycin and bacitracin, affords prolonged blood concentration when injected into the animal body, and can be used with safety in man.—*J. Am. Pharm. A. (Sept., 1950).*

New Fungicides

Two new agents which are antifungic in action are reported. They have been isolated from a soil actinomycete. (*Science*, Oct. 13, 1950:423). One resembles actidione in chemical and biologic properties. A second is called fungicidin and differs from other antibiotics previously reported. It is effective *in vitro* against a large number of nonpathogenic and pathogenic fungi.

Blackhead Treatment.—Enheptin T is the best drug developed so far for the prevention and control of blackhead (*Successful Farming*, Oct., 1950).

Feeder cattle will refuse to eat grain in which sulfaguanidine has been mixed. They will take this drug readily in water but not in feed.—*John Dewar, D.V.M, Iowa.*

Short cuts and wishful thinking will not substitute for sound procedures in brucellosis eradication, says the subcommittee on research of the National Brucellosis Committee.

Atropine sulfate is recommended as a specific antidote for poisoning by the newer phosphorus-containing insecticides (*Cur. Med. Dig.*, July, 1950). The atropine may be administered by mouth, subcutaneously, or intravenously.

Blowflies on Danish Sheep.—The importance of myiasis caused by *Lucilia sericata*, Mg. is lower in Denmark than it is in England. The difference seems to lie largely in the difference in rainfall.—*Rev. Applied Entomol., July, 1950.*

Trichomoniasis in Cattle

Under the title "Infertility in Cattle with Special Reference to Trichomoniasis," *The Veterinary Record* (*62*, Sept., 16, 1950) published a series of papers entitled: (1) The Clinical Aspect and Diagnosis of Trichomoniasis with Particular Reference to the Bull by H. P. Harding; (2) The Host-Parasite Relationship Between the Female Bovine and *Trichomonas Foetus* by A. E. Pierce; (3) Infertility from the Point of View of an Officer in Charge of an Artificial Insemination Centre by D. M. Thomson; and (4) Nonspecific Infertility by W. B. Shaw. The series will be interesting to practicing veterinarians who face the problem of freeing herds of trichomoniasis.

Toxoplasmosis in the Dog—Report of a New Case

DONALD E. JASPER, D.V.M., Ph.D.

Davis, California

TOXOPLASMOSIS, a little known disease, has received some attention in recent years because of its increasing frequency in man[11]. In infants, necrotic and granulomatous foci containing the organisms are found in the brain. Clinical manifestations are much less common in adults but are more generalized. The condition in infants may be congenital, thus indicating that the mother may be a carrier without showing symptoms. It has been suggested that man acquires the disease from dogs, cats, rats, and mice[8] but this has not been proved.

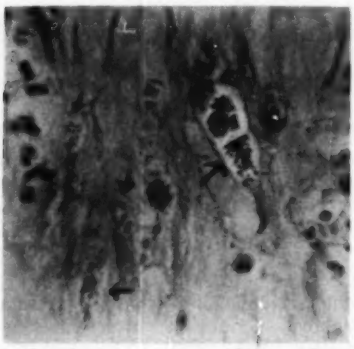

Fig. 1—Toxoplasma organisms within pseudocysts in muscularis mucosa. Oil immersion.

Toxoplasma are regarded as Protozoa comparable in some respects to Encephalitozoon, Leishmania, Sarcosporidia, and bird malaria. A study by Perrin[11] disclosed definite differential features by which it can be distinguished from Encephalitozoon organisms which it most closely resembles.

As pointed out by Olafson and Monlux,[10] natural infection has been reported in the dog, rabbit, guinea pig, rat, gondi, squirrel, mole, monkey, pigeon, and numerous wild birds. Though a separate species of Toxoplasma has been described for the different host species, evidence indicates that but one species infects mammals and the bird strains may also be the same. Since it was first found in the gondi and in the rabbit, *Toxoplasma gondi* and *Toxoplasma cuniculi* are the most common appellations.

Keagy[3] recently reported an outbreak of toxoplasmosis in chinchillas. Of 60 animals, all showing symptoms, 20 died before veterinary service was secured. A change of diet and treatment with sulfamethazine and streptomycin for four days was initiated.

Fig. 2—Pseudocyst in muscularis mucosa. Note cellular exudate surrounding vessel at the left. Oil immersion.

During treatment, 15 died; the 25 survivors apparently returned to normal.

In tissue sections stained with hematoxylin and eosin, the organisms appear as round or oval bodies about 2 μ wide and 3 μ long. The dark blue nucleus may be centrally or eccentrically placed in a pale blue- or pink-staining cytoplasm. The true pyriform or elliptical shape, which is about 4 μ long and pointed on one or both ends, is best seen in smear preparations but is sometimes seen in sections. The organism possesses no flagella or kinetoplast and is not motile. It reproduces by binary fission.

Toxoplasma may be found free in the tissues, loosely grouped within cells, or in compact cystlike accumulations. Discrete

From the School of Veterinary Medicine, University of California, Davis.

The author acknowledges the coöperation of Dr. H. A. Snellbaker, Oroville, Calif., who submitted the specimens from which this case was diagnosed and gave his permission to use the clinical history which he supplied.

outlines of organisms in the cystlike accumulations are difficult to make out and there the parasites are definitely smaller and more regular in shape than those free in the tissues or in smears. Most cystlike accumulations are actually within cells and all may have their origin within a tissue cell of some type. Hence, they are commonly called "pseudocysts." These are common in such cells as macrophages, endothelial cells, hepatic cells, smooth muscle cells, and cardiac muscle cells.

REPORTS IN LITERATURE

Toxoplasmosis in the dog was described in Italy by Mello[7] as early as 1910. Characteristic organisms were found in 1911 by Carini[1] in the lungs, spleen, liver, kidneys, and bone marrow of a dog. The condition was reproduced by inoculation of pigeons. Yakimoff and Kohl-Yakimoff[12] also reported on a case in a dog in 1911. Injection of emulsified bone marrow produced death in mice, pigeons, and 2 dogs, but not in rats and rabbits. Toxoplasma organisms were found in the brain, bone marrow, spleen, lymph nodes, lungs, small intestine, colon, and cardiac muscle of a dog dead of the disease by Nicolau and Kopciowska[9] in 1935. Two cases of naturally occurring toxoplasmosis in the dog were reported in Baghdad in 1939 by Machattie.[6]

MacIntyre[8] and associates reported a case of toxoplasmosis in the dog and referred to a case in a 10-month-old dog in Sweden. Symptoms included a high temperature for two weeks, temperamental changes, and convulsions. Postmortem examination showed a large area of necrosis in the medulla. Many organisms were present, both singly and in pseudocysts.

The first American cases were described in 1942, in the excellent report of Olafson and Monlux[10] in which they describe the disease in a sheep, a cat, and 2 dogs. Of considerable interest was the intraperitoneal inoculation of lymph gland material from a naturally occurring case into a 3-month-old puppy. Toward the end of the third week, it refused food and developed a severe diarrhea. After being sick about a week, it began to recover. Within ten days, 6 litter mates kept in the same box stall sickened with similar symptoms. Within seven weeks of the original inoculation, all litter mates had died. Gross lesions suggestive of toxoplasmosis were found in the fifth pup to die and histologic sections revealed the organisms. Transmission did not occur when the originally injected puppy was then placed with 2 other pups.

A second American report is that of Langham and Sholl[4] which, though reported in 1949, goes back to a case in 1924. This case was typically characterized by pneumonitis, gastric and intestinal ulcers, and foci of hepatic necrosis. These authors also summarized the previously reported canine cases.

REPORT OF A NEW CASE

This patient, a male German Pointer 3 months of age, was first seen Feb. 27, 1950, at which time it was presented to Dr. H. A. Snellbaker of Oroville, Calif., along with a 2-year-old Shepherd which was diagnosed clinically as having distemper. The Shepherd was reported to have been sick for about a week with progressive loss of appetite and, finally, ocular and nasal purulent discharge. The temperature was 102.8 F. The dog was hospitalized and responded very nicely to treatment. The temperature of the puppy was 102.2 F. and he appeared to be normal. Canine distemper antiserum, 40 ml., was administered prophylactically and the owner was instructed to bring the puppy back if symptoms appeared.

On March 5, the puppy was returned with a history of refusing food and vomiting since March 3. The temperature was 104.0 F., and the patient was somewhat depressed. Penicillin and 35 ml. of fox encephalitis antiserum were administered. Frequent vomiting continued during the next twenty-four hours. Penicillin, dextrose, liver extract, and vitamin B complex were given parenterally until March 8 when the temperature dropped to 97.0 F. and the animal succumbed that morning.

Necropsy.—At autopsy, gross lesions were confined to the abdominal cavity. About 15 ulcers were found in the small intestine, the liver was uniformly mottled, and mesenteric lymph nodes were swollen. No gross pathology was noted in other organs. Portions of the small intestines, liver, kidney, and a mesenteric node were preserved in formalin and sent to the School of Veterinary Medicine, University of California, for further study. Upon arrival of the formalin-preserved specimens, the gross appearance of the kidney tissue was normal, the mesenteric node was enlarged, and the liver was pale and mottled. Three ulcers with raised edges and craters 3 to 7 mm. in diameter were observed along with five raised areas of erosion just forming craters in the 10-in. portion of small intestine.

Histopathology.—The liver showed extensive involvement, approximately ¼ of the parenchyma being replaced by foci of necrosis which occurred in all parts of the lobule or destroyed whole lobules. There was a slight mononuclear invasion of these areas and some organisms, either free or within monocytes, could usually be found. The

boundary between normal and necrotic areas was sharp, and hepatic cells filled with Toxoplasma were occasionally seen here. Pseudocysts could be found in hepatic cells or in sinuses within Kupffer's or other phagocytic cells quite remote from areas of necrosis

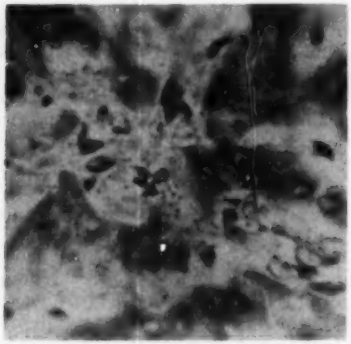

Fig. 3—Toxoplasma organsims free within wide hepatic sinuses. Oil immersion.

and without other evidence of reaction. At times, clusters of the parasites appeared to be pouring forth from degenerating cells.

In the lymph node studied, the entire structure had undergone necrosis and was replaced by a hyalin stroma suggestive of fibrin associated with comparatively widely scattered fibrocytes and fibroblasts. Against this background, polymorphonuclear leucocytes, erythrocytes, lymphocytes, and macrophages could be found. Many were obviously degenerating and nuclear debris was common. Organisms, free or in macrophages, could be found in such areas but were more common in portions undergoing active fibrosis with a good blood supply.

Although the kidney appeared normal grossly, occasional focal areas of necrosis were found in the cortex of the kidney. The necrosis appeared to begin in the interstitial tissue and spread to involve the tubules. Organisms were found with comparative ease in the necrotic areas, both free and within macrophages. Several examples of pseudocysts were found in tubule epithelial cells within and at the margins of the necrotic zone.

In the duodenum, the necrosis and inflammation appeared to originate in the submucosa and to spread from there into the muscularis and muscularis mucosa and from thence into the propria resulting, eventually, in destruction of mucosal epithelium. Submucosal necrotic areas were invaded by polymorphonuclear neutrophils, lymphocytes, and macrophages. Organisms were frequently seen in the latter as well as free. Many invading cells were also undergoing necrosis. As the center of the ulcers was approached, this necrotic granulomatous tissue invaded and replaced all tissue layers of the intestine forming the floor of the ulcer and extending to the serosa in some places.

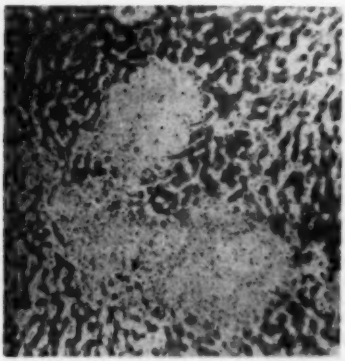

Fig. 4—Extensive focal hepatic necrosis due to Toxoplasma organisms. Low power.

Pseudocysts were most dramatically seen in smooth muscle cells somewhat removed from actual necrosis. Here, they assumed an elongated cigar shape in conformity with the cell. In areas of the external muscularis only slightly involved, there appeared to be an obvious relationship between penetration of capillaries from the necrotic internal muscularis and the finding of Toxoplasma in the near vicinity. Such capillaries were accompanied by an irregular cuff up to several cells thick and made up primarily of polymorphonuclear leucocytes and macrophages. Organisms were not seen in endothelial or epithelial cells at any time. Rarely, they were found in the smooth muscle cells of small arteries.

DISCUSSION

On the basis of the few reported cases, toxoplasmosis in the dog is characterized by a sudden onset, high temperature, and a short course. All known, naturally occur-

ring cases have been fatal but apparently 1 case produced by intraperitoneal inoculation was observed to recover.[10] Other symptoms may include dyspnea, vomiting, emaciation, diarrhea which is sometimes bloody, a tender abdomen, icterus, stomatitis, conjunctivitis, enlarged lymph nodes, and nervous manifestations.

Gross lesions include pneumonia, edema, hyperemia, nodule formation, and emphysema of the lungs; ulcers with or without free blood in the gastrointestinal tract; enlarged necrotic, edematous, or hemorrhagic lymph nodes; acute splenitis; pancreatitis with fat necrosis; extensive focal necrosis of the liver; and necrosis of the brain.

Microscopically, the lesions are characterized by foci of necrosis which may become widespread. Leucocytic infiltration into areas of necrosis is variable but usually mild. The necrosis is most widespread in the liver, intestines, smooth muscle, and lymph nodes, but is also seen in various other organs. In association with necrotic foci, Toxoplasma may be found free, within macrophages, or within parenchymal cells. Appearance of pseudocysts is perhaps more common in otherwise normal appearing parenchymatous cells somewhat removed from the foci of necrosis.

The organisms are ubiquitous in their distribution having been found in lungs, heart muscle, smooth muscle, brain, spleen, bone marrow, liver, kidney, lymph node, small intestine, and colon. Both phagocytic and nonphagocytic cells are invaded, and Toxoplasma organisms have been observed in monocytes, kidney tubule epithelial cells, Kupffer's cells, hepatic cells, smooth muscle cells, vascular endothelium, pulmonary epithelium, and pancreatic epithelium.

Modes of transmission are not well understood. In 1 case,[10] the dog was known to have eaten a rabbit a few days before he became sick. The intestinal ulcers suggest an alimentary entry. Experimental animals are easily infected by intraperitoneal or intravenous inoculation.

Canine toxoplasmosis assumes importance as a sporadic disease of unknown frequency calling for keen clinical acumen and laboratory diagnosis. Its possible relationship to public health must also be kept in mind.

SUMMARY

Canine toxoplasmosis is discussed from the standpoint of symptoms and lesions and a new case is described.

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Trichocidin—Trichomonacidal Agent

A mold belonging to the Penicillium group was found to produce an antibiotic substance which prevents the growth of *Trichomonas fetus* and of Staphylococcus. A series of tests have been run and reports have been issued by M. Watanabe, I. Hamakawa, A. Iwata, and S. Henmi, of the Chugoku Branch, Government Experimental Station of Animal Hygiene, Japan.

In field tests, it was concluded that trichocidin is at present the best therapeutic agent for trichomoniasis of cows; however, because of incomplete methods of standardization, the results have been variable and the methods of purification and stabilization must be improved before it will be a commerically valuable product.

Scientific reading and writing should be accepted by every veterinarian as a very real part of his life work.—*Canad. J. Comp. Med. and Vet. Sci.*

Preliminary Report on the Blood Picture of the Arabian Horse

During the course of a series of studies on the hematology of Thoroughbreds,[1] an opportunity arose to obtain blood samples from a small number of purebred Arabian horses for purposes of comparison. Perhaps the only other report on the blood picture of Arabians was given by MacLeod *et al.* (*Cornell Vet., 37,* (1947): 305-313) which likewise was based on a small number of animals. It is hoped that the present paper will serve to complement the findings of MacLeod and his associates, as well as to stimulate further studies on the blood picture of healthy Arabians in other regions of the country. The present paper is based on 5 barren mares, 4 mares in foal, and 7 stallions (table 1).

The methods used in this study are outlined briefly. A more detailed description of the methods used is given in studies on the hematology of the Thoroughbred horse, Hansen.[1] The blood samples were collected in the morning after the horses had been stalled for at least one hour. Five milliliters of blood were collected from the jugular vein in bleeding tubes containing enough ammonium and potassium oxalate mixture to make a concentration of 2 mg. per milliliter of blood. The erythrocyte and leucocyte counts were done in duplicate and the two counts had to be within 500,000 cells per cubic millimeter and 1,000 cells per cubic millimeter, respectively, before they were averaged and recorded. Counts which were not within the stated limits were repeated until these limits were achieved. Hemoglobin content was measured by means of the Fisher electro-hemometer. The percentages of the various types of leucocytes are based on a count of 200 cells.

Because the degree of parasitism may influence the blood picture of an animal, it is advisable in studies of this nature to include data relative to numbers and kinds

TABLE I—Blood Picture of the Arabian Horse

Category	Number of horses	Measure	Erythrocytes 10^6/cmm.	Hemoglobin Gm./100 ml.	Packed volume erythrocytes (%)	Leucocytes 10^3/cmm.	Mean corpuscular volume cubic microns	Mean corpuscular hemoglobin concentration (%)	Leucocytes (%)				
									Neutros.	Lymphos.	Monos.	Eos.	Basos.
Barren mares	5	Range	7.01—11.12	10.0—14.5	30.0—45.1	6.10—11.75	39.6—43.1	32.0—33.7	52.0—58.0	35.5—40	0.0—3.5	2.5—4.5	
		Average and s.e.*	9.62±0.614	12.98±0.714	39.50±2.392	9.42±1.135	41.14±0.642	32.86±0.304	55.6±1.516	38.5±1.224	2.2±0.892	3.5±0.471	<0.5
		Standard deviation	1.372	1.596	5.349	2.538	1.435	0.679	2.626	2.121	1.545	0.816	
Mares in foal	4	Range	8.11—10.04	11.5—13.2	33.0—42.5	6.55—9.60	39.6—42.3	31.0—34.8	37.0—52.0	41.0—57.0	1.0—1.5	2.5—8.0	
		Average and s.e.	9.14±0.340	12.35±0.358	36.75±1.807	8.11±0.617	43.00±0.559	33.70±0.784	46.00±2.893	47.0±3.042	1.2±0.176	4.9±1.005	None
		Standard deviation	0.719	0.715	3.614	1.234	1.118	1.568	5.787	6.086	0.353	2.011	
Stallions	7	Range	8.91—10.73	11.8—14.9	34.5—45.5	6.35—10.80	37.60—42.40	32.7—33.8	43.0—70.5	28.0—51.0	0.0—3.5	1.0—3.0	
		Average and s.e.	10.04±0.294	13.20±0.358	39.41±1.163	8.65±0.557	39.2±0.559	33.5±0.199	57.8±5.203	37.8±4.542	2.1±0.670	8.5±0.446	None
		Standard deviation	0.779	0.948	3.077	1.473	1.586	0.527	10.406	9.085	1.340	0.893	

*Standard of error.

The investigation reported in this paper is in connection with a project of the Kentucky Agricultural Experiment Station and is published by permission of the director.

The authors thank the owner and manager of the Selby Stock Farm, Buenae Vista, Ohio, for making available the Arabians used in this study. Acknowledgement is also made to Gordon G. Stocking, D.V.M., Veterinary Division, the Upjohn Company, Kalamazoo, Mich., for selecting the healthy Arabians used in the study and for collecting the blood samples.

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of parasites present in the test animals. The kinds and relative numbers of worm parasites of the horses used in this study were determined by fecal egg counts. The results of the egg counts are reported as eggs per gram of feces. Strongyles were the only intestinal helminths found in the three categories of Arabians. The 5 barren mares showed average egg counts of 1,315, and the range of egg counts was 656 to 2,224. The 4 mares in foal showed average egg counts of 1,080, and the range of egg counts was 176 to 1,616. The 7 stallions showed average egg counts of 538.6, and the range of egg counts was 32 to 1,056.

In order to compare our results with those of MacLeod *et al.* (*ibid.*), it was necessary to obtain the average erythrocyte and leucocyte counts and hemoglobin content for all the Arabians irrespective of category. The average values obtained in our study were as follows: erythrocytes 9,600,000 per cubic millimeter, leucocytes 8.700 per cubic millimeter, and hemoglobin 12.8 Gm./100 ml. of blood. The average values obtained by MacLeod *et al.* (*ibid.*) were as follows: erythrocytes 11.500,000 per cubic millimeter, leucocytes 11.000 per cubic millimeter, and hemoglobin 13.0 Gm./100 ml. of blood. Because the exact conditions under which MacLeod *et al.* worked and the parasite burdens of the Arabians used in their study were not reported, it appears inadvisable to attempt an explanation of our lower mean blood values for the Arabians used in our study.—*M. F. Hansen, Ph.D., and A. C. Todd, Ph.D., Department of Animal Pathology, Kentucky Agricultural Experiment Station, Lexington, Ky.*

Carotid Loops in Cattle

Arterial blood is sometimes required for blood studies. Several methods have been described, but a method of establishing a carotid loop in the jugular furrow of the dairy cow is described by G. L. McClymont (*Austral. Vet. J.*, June, 1950: 138-139). From such a loop, samples of arterial blood can be collected quickly, easily, repeatedly, without excitement, and without damage or danger to the animal.

The same author describes a technique for establishing a small ruminal fistula for cattle (*ibid.*: 140).

Treatment of Anaplasmosis in Cattle

Anaplasmosis in cattle in southern Oregon is present each spring as cattle are moved in from the southern states for pasture. Some of the animals show symptoms when they are driven from the train or truck to pasture, and others when they are rounded up to be vaccinated for anthrax. In four years, only 1 case was noted in local cattle. Previous to the spring of 1950, about 50 per cent of the cases treated with various drugs died; therefore, we have been on the lookout for a good treatment.

In the February, 1950, issue of the *Journal of the American Veterinary Medical Association*, several experiments were listed by the men in charge of the Oklahoma experiment station. Their best results were obtained with aralen diphosphate (Winthrop-Stearns, Inc.) given intravenously.

We ordered some aralen diphosphate. It came in bottles of ten tablets, each tablet containing 0.25 Gm. By dissolving two of these tablets in 100 cc. of distilled water, it was ready to be given intravenously.

We treated 21 cases of clinically diagnosed anaplasmosis, repeating the treatment in forty-eight hours on 4 of the animals. In the balance, one treatment was sufficient. Some of the animals were eating well within forty-eight hours, and all, except one, were apparently healthy within three weeks. The animal that died was very wild and after treatment ran through a pole fence and about ¼ mile into the pasture, where it dropped dead.

As most of the ranchers on this area recognize anaplasmosis when they see it, they have been instructed to leave the animal on the road or in the pasture where they find it and we will treat it there.

SUMMARY

From the results obtained by treating 20 cases of anaplasmosis in cattle, aralen diphosphate is indicated in the treatment of these animals in southern Oregon and northern California.—*Harry A. Leonard, D.V.M., and Marley C. McFadden, D.V.M., Klamath Falls, Ore.*

Cattle suffering from avitaminosis should not be shipped.

Streptomycin in the Treatment of Actinomycosis

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Cheyenne, Wyoming

UNUSUALLY favorable results were obtained when streptomycin was used in treating actinomycosis in cattle. This was true, even when the bone was definitely involved. Laboratory methods were used to established the presence of *Actinomyces bovis* in the lesions.*

Very little information was found to guide us in establishing the size of the dose, the frequency of dosage, and the interval between doses. We realize that the number of cases here reported is small, since treatment is short. On the other hand, we are convinced that the results achieved are markedly superior to those previously observed in numerous cases under a wide variety of treatment and surgical procedures. Therefore, we present this information as a case report, but draw no definite conclusions.

The animals treated were variable in chronicity and extent of damage. In some, the area of involvement was restricted to a diameter of only 3 or 4 in., while in others, the diameter was as great as 8 to 12 in., and the infection seemed to involve the entire ramus. Even the advanced cases were treated. Recovery was not expected, but we hoped to learn to handle the less severe cases in a way which would help to increase the number and rate of recoveries.

Ten cases have been treated and observed for a period of three to eleven months. The information collected appears in table 1.

TABLE 1—Data on 10 Cases

Case	Bone size (inches)	Soft tissue only	Lab. Diag.	Duration prior to streptomycin	Previous treatment	First treatment	Dosage and frequency	Duration of treatment	Total amount (gm.)	Adjuvant treatment	Last observation	Condition at last observation
1	8 x 10		A. bovis	12 mo. or more	none	9/19/49	5 gm. daily for 3 days Rest and repeat	9 mo.	65 gm.	Penicillin Surgery and KI	10 mo.	Arrested Died—pneumonia
2	4 x 10		A. bovis	12 mo. or more	none	12/17/49	5 gm. 3 times	1 wk.	15 gm.	Surgery	7 mo.	Arrested
3	—	+	?	1 mo.	surgery and KI	1/23/50	5 gm. 4 times	1 wk.	20 gm.	Surgery and KI	7 mo.	Arrested
4	—	+	None	12 mo. or more	surgery and KI	4/3/50	5 gm. 3 times	1 wk.	15 gm.	Surgery and KI	4 mo.	Arrested
5	5 x 6		Negative	?	none	9/19/49	5 gm. 7 times	3 mo.	35 gm.	Surgery and KI	10 mo.	Arrested
6	3 x 4		A. bovis	12 mo. or more	none	3/13/50	5 gm. 3 times	1 wk.	15 gm.	Penicillin	7 mo.	Arrested
7	—	+	C. pyogenes	3 weeks	surgery and KI	9/16/49	5 gm. 3 times	3 wk.	15 gm.	None	10 mo.	Arrested
8	6 x 8		A. bovis	Long standing	none	12/8/49	5 gm. 6 times	8 mo.	30 gm.	Surgery and KI	10 mo.	Still infected Stationary
9	—	+	C. pyogenes	Long standing	Surgery and KI	12/22/49	3 to 5 gm.	1 mo.	18 gm.	None	9 mo.	Arrested
10	?		C. pyogenes	3 mo.	none	3/30/50	5 gm. 6 times	1 mo.	30 gm.	Surgery and formalin	5 mo.	Recovered

Routine dosage consisted of 5 Gm. of streptomycin in 10 cc. distilled water. It was injected subcutaneously around the periphery of the area every day for three days. Additional injections were given at varying intervals, depending upon the progress made by individual cases.

Discussion of Cases.—Case 1 was looked upon as an incurable case from the beginning. She was accepted, along with the others, for treatment with streptomycin, in order to determine what could be done with an animal that certainly was incurable under any known treatment prior to the use of streptomycin.

*We are indebted to Dr. J. F. Ryff, Wyoming State Veterinary Laboratory, Laramie, Wyo., for his coöperation in the laboratory phase of the work.

Figure 1

Case 1 (top) at the beginning of the treatment with streptomycin; (center) about four months after first treatment; (bottom) nine months after first treatment.

The infected area presented the usual honeycombed mass associated with actinomycotic granulation tissue that is clinically characteristic of actinomycosis or "lumpy jaw."

The streptomycin treatment was supported by repeated efforts to drain the area by appropriate surgery.

The cow was bred in December, 1949, and conceived. In the latter part of July,

Figure 2

Case 2 (top) before treatment with streptomycin; (bottom) after one week's treatment.

1950, she was given about an ounce of hyamine (a proprietary iodine preparation), and within about seven days she aborted a 7-month fetus.

For several months she had been deteriorating physically and it was quite apparent that some systematic invasion of actinomycotic origin was present. She gradually became more emaciated and was destroyed on July 13, about ten months following the initial treatment. The ramus had changed from the honeycombed appearance that is associated with an abundance of connective tissue.

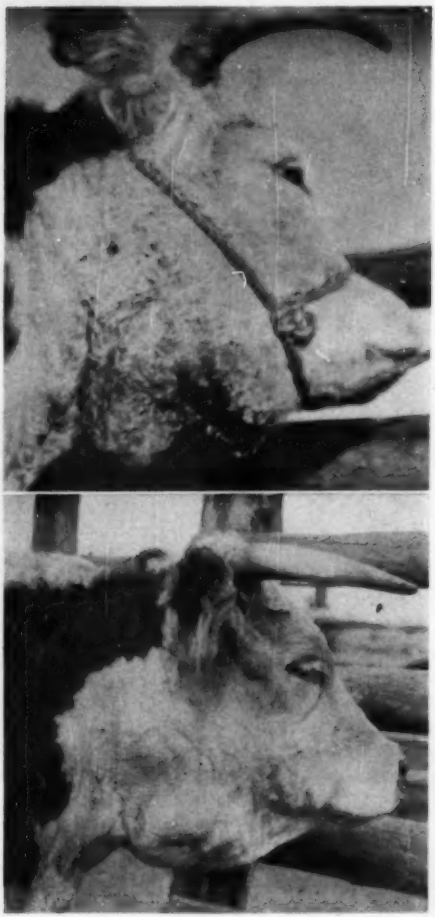

Figure 3

Case 9 (top) at beginning of treatment with streptomycin; (bottom) ten months following first treatment.

There remained a considerable amount of edema beneath the ramus and one fistulous tract that communicated with a small abscess within the ramus. But, as a whole, rather remarkable progress was made in so far as the actinomycotic lesion was concerned.

The lungs presented an extensive pneumonic condition. The lung tissue was interspersed with abscesses about the size of a grain of wheat to the size of a pea but were not of a typical actinomycotic nature. This tissue was not subjected to bacteriologic investigation.

It is pointed out that the fatal termination in this case was due to the pneumonic condition and the abortion of the fetus rather than to the actinomycotic invasion of the ramus of the jaw.

The other cases reported here (table 1) made favorable progress for at least eleven months (last observation) with the exception of cow 8. This animal was not under observation for several months following the initial treatment and at the time of the last observation, which was about eight months following the initial treatment, she was in a stationary state and offered a more or less favorable case prospect, considering our past experience with streptomycin, but she was on her way to slaughter and further treatment was not undertaken.

In conclusion, we may say that our experience with streptomycin in the handling of actinomycosis of the bone in cattle has been extremely encouraging.

"Antivirotics"

Besides cinching a permanent place in the medical vocabulary for the new word *antivirotics*, Rutgers University (New Brunswick, N.J.) and the agricultural experimental station have established a well-equipped laboratory for research on substances capable of conquering the viruses. A building for the purpose on the agricultural campus will be solely for research on viruses.

A chronic form of enteritis occurs when feeders are kept in lots too long or fed spoiled hay or silage.

Diabetes Mellitus in Dogs and Cats

Report of Nine Cases

CARL F. SCHLOTTHAUER, D.V.M., and J. A. S. MILLAR, D.V.M.

Rochester, Minnesota, and Deal, New Jersey

DIABETES mellitus is a common ailment in man. It also occurs in some species of lower animals, but in none of them is it common. Its occurrence in the horse, ox, dog, cat, and monkey is mentioned in the literature. Among these species, it has been observed most frequently in the dog. The incidence of diabetes in the dog and cat are herein reviewed, and 8 cases in dogs and 1 in a cat are reported.

The incidence of diabetes in dogs has been reviewed by Bloom and Handelsman[1] who observed 2 cases among 2,443 dogs. They mentioned that Aellig and Fröner each found only 1 case among 10,000 dogs; Eber, on the other hand, found 6 among 10,000; Luth, 6 among 4,000; and Schindelka, 3 among 4,000. These reports tend to indicate that the incidence of diabetes in dogs may be only slightly less than 1 in 1,000.

REVIEW OF LITERATURE

The number of cases of diabetes in dogs reported in the literature is relatively small. Mettan and Graig[2] reported a case in 1916 in a 9-year-old female Irish Terrier. No further cases were reported until 1932, when Milks[3] listed 7 cases. This served to call attention, again, to the occurrence of diabetes in dogs, and several other reports of cases have since appeared in the literature. Cushing[4], in 1934, reported its occurrence in an 8-year-old crossbred Collie and Airedale female that had been spayed at 2½ years of age. Milks with Stephenson[5], in 1937, reported an additional 10 cases of diabetes in dogs. The ages of the affected animals ranged from 1 to several years and the disease occurred in both males and females, but the latter were more often affected than the former. That diabetes in dogs occurs more often in females than in males is also borne out in reports by Malherbe[6], Christensen[7], McBride[8], Vine[9], and Pollock and Bauman[10]. Each of these authors reported its occurrence in the female. Waddington[11] reported diabetes in a 12-year-old male Fox Terrier. This, and the report by Milks and Stephenson, are the only instances of its occurrence in the male dog which we found in the literature.

Mettan and Graig[2], in their report of diabetes in a dog, mentioned that Prof. W. A. Thompson of Trinity College, Dublin, had earlier described the occurrence of this disease in a laboratory cat, the earliest report we found in the literature. Three other cases have since then been reported. Hjärre[12], in 1927, observed diabetes in an 11-year-old, castrated male Persian cat. Another case was cited in a discussion by Rubarth[13], but the author's name was not mentioned. In this report, Rubarth discussed amyloid degeneration of the island of Langerhans cells as a cause of diabetes. The third case was reported by McEvoy[14], in 1949, in a 6-year-old castrated male cat, and was treated with protamine insulin. There undoubtedly have been other cases reported in the literature but they have escaped our attention.

The foregoing brief review of the literature is presented to illustrate that the occurrence of diabetes in dogs and cats has been known for some time. It is interesting to note, too, that in cats diabetes appears to occur more frequently in males, whereas in dogs it occurs more commonly in females.

We have observed the occurrence of diabetes in 8 dogs and 1 cat. The diagnosis in all instances was confirmed by laboratory tests. The following is a brief review of these cases.

REPORT OF CASES

Case 1.—A 9-year-old, female, crossbred Spaniel and Pointer had been spayed when it was a young puppy.

History and Symptoms.—This dog was apparently well until about a year prior to the time of this examination. The first symptoms noted were incontinence, polyuria, and an occasional fatty stool. During the month or two before examination, the animal had gradually lost weight and condition, but the appetite remained good.

Clinical Examination.—The owner requested that the animal be destroyed. A blood specimen was obtained at the time of euthanasia. It contained 474 mg. of sugar per 100 cc.

Dr. Schlotthauer is in the Division of Experimental Medicine, Mayo Foundation, Rochester, Minn.; Dr. Millar is in general practice in Deal, N. J.

Pathology.—Microscopic examination of the pancreas revealed it to consist of small nodules of parenchymatous tissue surrounded by masses of fibrous tissue. The nodules of parenchymatous tissue probably represented an attempt of the organism to restore the pancreas following an attack of pancreatitis. Examination of these nodules showed them to be composed chiefly of acini and tubules. There were no definite islands of Langerhans present, but scattered among the acini were some cells that looked like island of Langerhans cells. These appeared swollen and hydropic and were unlike normal island cells.

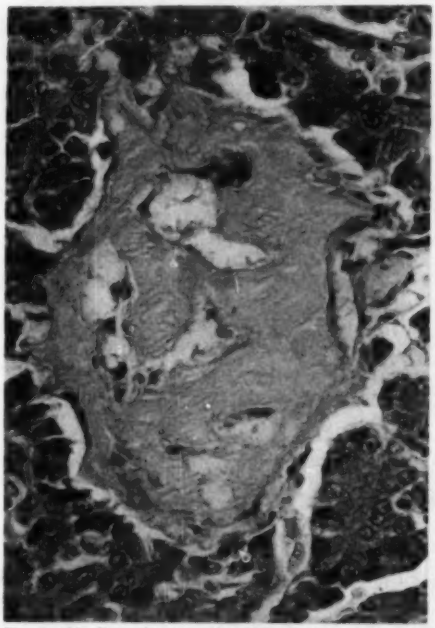

Fig. 1—Hyaline degeneration of islands of Langerhans. x 385.

Case 2.—Case 2 was a 2-year-old, male Boston Terrier.

History and Symptoms.—This dog had been sick for about five months. The symptoms noted were polyuria and recurrent attacks of vomiting, diarrhea, and bloating. During an attack, the stools were four to eight per day and often were so fatty that they would solidify on cooling. The appetite remained good and at times was ravenous, but despite this the animal gradually lost weight and condition.

Clinical Examination.—The owner requested that further clinical examination be omitted and the animal be destroyed

Pathology.—Gross examination at necropsy revealed only a small region of atelectasis in one lung and a markedly atrophic pancreas. Microscopic examination of the pancreas revealed only scattered remnants of parenchymatous tissue and a minimal amount of fibrous tissue. Apparently, all tissue elements of the pancreas atrophied simultaneously. Examination of the parenchymatous tissue revealed a complete absence of islands of Langerhans and island cells. The cells of the acini were small and atrophic. The pancreas apparently was doomed to complete destruction.

Case 3.—This dog was a 6-year-old, female Terrier-type mongrel.

History and Symptoms.—Gradual loss of weight had occurred over a period of about three months and the animal appeared to tire easily. Other symptoms noted were

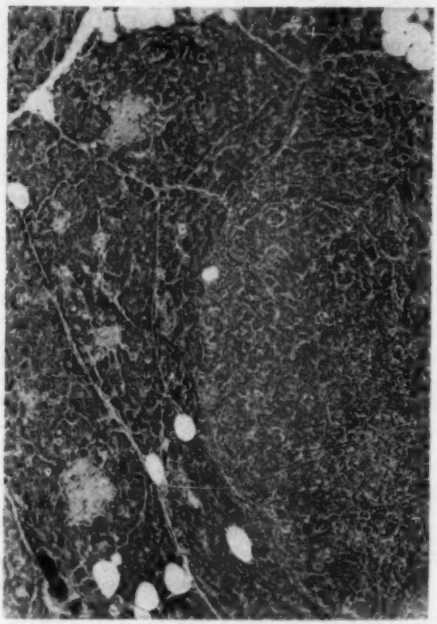

Fig. 2—Note hyalinized islands of Langerhans and region of hyperplasia of acini in which there were no islands. x 60.

polyuria, polydipsia and, more recently, a gradual impairment or loss of sight. The appetite remained good.

Clinical Examination.—The animal's physical condition was poor. Cataracts were present bilaterally; the body temperature was 101.8 F., and the pulse was slower than normal; the urine contained sugar (2.3%); and the sugar content of the blood was 266 mg./100 cc.

Pathology.—The owner requested euthanasia for this dog, but a necropsy was not permitted.

Case 4.—Case 4 was a 12-year-old, female Cocker Spaniel.

History and Symptoms.—This dog had been quite fat but recently had lost much weight and now was less mentally alert than normal. The only other symptom noted was polyuria. The owner had observed too, in wiping some of this urine from the floor when it was partially dried, that it was sticky. The animal's appetite was only fair.

Clinical Examination.—This dog was in poor physical condition. The urine contained sugar (3.0%), and the sugar content of the blood was 258 mg./100 cc.

The animal died on the second day after the initial examination.

Pathology.—There were no macroscopic lesions. The pancreas appeared to be normal in size, but microscopic examination of this organ revealed diffuse fibrosis and hyperplasia of the acini. Nearly all of the islands of Langerhans had disappeared completely, and the few that remained were abnormal. They appeared to be undergoing hyaline degeneration. The cells of the liver appeared to be filled with fat, but the material may have been glycogen. There also were widespread changes in the kidneys. These could be due in part to glycogen degeneration, which also occurs in human diabetic patients.

Case 5.—This case was a 9-year-old, female Pointer.

History and Symptoms.—Gradual loss of weight had occurred over a period of eight months or longer. Polydipsia and, more recently, loss of sight were present. The appetite was good.

Clinical Examination.—This dog was in poor physical condition, and the owner requested that it be destroyed. Therefore, further clinical examination was not possible.

Pathology.—There were no definite macroscopic lesions observed in this dog, but microscopic examination of the pancreas and kidneys revealed significant changes in these organs. There was an almost total absence of islands of Langerhans in the pancreas. The few islands that remained appeared to be undergoing hyaline degeneration and fibrosis. They all were abnormal. In the kidneys, there was widespread destruction of the glomeruli and tubules. The pathologic changes present in the kidneys were similar to those seen in case 4.

Case 6.—This dog was an 8½-year-old, female smooth-haired Fox Terrier.

History and Symptoms.—The symptoms noted were polydipsia, polyuria, and occasional attacks of vomiting. The body temperature was 101.2 F., and the appetite was good.

Clinical Examination.—The dog's condition was fair. The urine contained sugar (3%), and the sugar content of the blood was 222 mg./100 cc.

Because this dog still was in fair condition, the owner asked that we attempt to control the diabetes with insulin. Since it was not known how much insulin is required to control diabetes in a dog, the amounts administered in this instance were not based on previous experience. The initial amount of insulin administered was 20 units. This was repeated at intervals of forty-eight hours until six treatments were given and then was repeated at intervals of seventy-two hours until a total of nine treatments had been administered. However, after the dog had received these nine treatments, the urine still contained sugar and the sugar content of the blood remained high (322 mg./100 cc.) The amount of insulin administered was then increased to 40 units at intervals of seventy-two hours, but the dog did not tolerate this well. The amount of insulin administered was reduced to 30 units and this was given daily. On this regimen, the dog appeared to do better, but still the diabetes was not completely controlled and the sugar content of the blood remained abnormally high (270 mg./100 cc.). The most recent information we had regarding this case is that the dog is again beginning to lose weight.

Case 7.—A 7-year-old, female English Setter was presented for treatment.

History and Symptoms.—This dog had been quite fat, but for no apparent reason

had lost considerable weight during the four weeks prior to the time it was first seen by us.

Clinical Examination.—The animal was thin and its abdomen appeared distended. In the eyes, there was a sticky mucoid exudate which tended to mat the eyelashes. The nose was dry and felt hard. The rectum was filled with hard fecal matter. This was evacuated spontaneously while this examination was in progress. The body temperature was normal. The urine contained sugar, but the amount present was not determined. The sugar content of the blood was 344 mg./100 cc. Since this dog was in poor physical condition, and the value of treatment for diabetes in the dog is doubtful, the owner requested that the animal be destroyed.

Pathology.—All that remained of the pancreas was a cordlike mass of fibrous tissue about 4 cm. in length. Indeed, it was difficult to identify this organ by its macroscopic appearance. Microscopic examination of the tissue removed from the site of the pancreas revealed it to be mostly fibrous tissue. There was only an occasional small mass of parenchymatous tissue, and it was composed of acini only. There were no islands of Langerhans in this tissue.

Case 8.—A 9½-year-old, female Irish Setter was presented for treatment.

History and Symptoms.—This animal showed gradual loss of weight and polydipsia. Its appetite was good until about two days prior to the time of this examination.

Clinical Examination.—The animal was emaciated. The body temperature was 101.4 F. Visible mucous membranes were pale. Microscopic examination of a fecal smear revealed many *Trichuris depressiuscula* (whipworm) ova. The urine contained sugar (1.7%); the sugar content of the blood was 359 mg./100 cc.

This dog was in such poor physical condition that it died three hours after completion of the examination.

Pathology.—Microscopic examination of the pancreas, which appeared smaller than normal, revealed an almost total absence of islands of Langherhans. The few that remained were undergoing hyaline degeneration and fibrosis.

Case 9.—This animal was a 9-year-old, male cat.

History and Symptoms.—Polydipsia was present, the appetite was fair, and there was lassitude and gradual loss of weight. The owner observed that the animal's urine contained a substance that tended to make it sparkle when exposed to light.

Clinical Examination.—This cat's physical condition was poor. The urine contained sugar; the sugar content of the blood was 436 mg./100 cc.

The condition was diagnosed as diabetes mellitus. No specific treatment was administered. The cat died on the day after this examination.

Pathology.—The pancreas appeared normal grossly, but microscopic examination of this organ revealed an almost total absence of islands of Langerhans. The few islands that remained appeared to be undergoing hyaline degeneration. In all instances, they were abnormal (fig. 1). The acini, generally, appeared essentially normal, but there were some nodules or regions in which the cells of the acini were hyperplastic. These regions were quite discrete (fig. 2). There were no islands of Langerhans in these regions or nodules. Microscopic examination of the liver revealed it to be in a state of passive congestion. All of the tissue spaces were filled with blood. The liver cells appeared to be filled with fat. This, however, may have been glycogen. In the kidneys, there was widespread degeneration. Many of the cells of the tubules contained material which did not take the stain used. The pathologic changes in the kidneys could in part be glycogen degeneration, infected urinary tracts, or calculi.

DISCUSSION

On reviewing the symptoms and pathologic characteristics of the cases of diabetes reported by us, it becomes apparent that they fall into two categories: (1) pancreatitis and (2) true (idiopathic) diabetes. Pancreatitis is common in dogs but when the entire pancreas is destroyed sufficiently to cause diabetes, the animal usually succumbs before symptoms of diabetes become apparent. Pancreatitis commonly causes fatty stools, distention with gas, pain on palpation of the abdomen, and loss of weight. These symptoms may obscure those of diabetes. In some of our cases, apparently there was true diabetes. The islands of Langerhans in these instances

had disappeared or were undergoing hyaline degeneration. The cells of the acini in some of these cases appeared hyperplastic.

Only 1 of the dogs in our series of 8 cases of canine diabetes was a male, whereas the 1 feline case was a male, again indicating that among dogs diabetes is more common in the female, whereas in the cat it is more frequent in the male.

Since loss of weight, polyuria, and polydipsia also commonly occur in association with infection or calculi in the urinary tract, a diagnosis of diabetes must be confirmed by laboratory tests. Diabetes apparently is not common in dogs, but unless one examines the urine of certain animals for the presence of sugar, one can easily overlook some symptoms of diabetes or attribute them to other causes.

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It appears that the fibropapilloma is a transmissible tumor of the external genitalia of cattle, but it is not known whether the skin papilloma virus or some other causative agent is involved.—*K. McEntee, D.V.M., Ithaca, N. Y.*

Epizootic Gastroenteritis in Chinchillas

HILAN F. KEAGY D.V.M., and EVELYN H. KEAGY D.V.M.

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The following is a case report on a herd of 800 chinchillas infected with *Pseudomonas aeruginosa* and *Salmonella typhimurium*.

History.—On April 14, 1949, we were asked to visit the ranch at which the chinchillas were located to discuss with the owners the problems concerning the losses. The time spent in careful preliminary arrangements and obtaining accurate history of the herd has been well accounted for as the value and responsibility of 800 chinchillas represents a considerable investment.

It was learned that the owners were

Fig. 1—Dark necrotic areas on the stomach and cecum (indicated by scissors and hemostat). A considerable amount of gas was present in the intestines. (This condition was found in the majority of cases.)

Drs. H. F. Keagy and E. H. Keagy are engaged in chinchilla research in Beverly Hills, Calif.

The photography and bacteriologic study was conducted by the Chinchilla Research Laboratory, Beverly Hills, Calif., and the Los Angeles County Livestock Department.

feeding a ration consisting of a few greens, alfalfa, bean straw, wheat germ, and an all-grain pellet. Medication for seven weeks during February, March, and April consisted of periodic doses of sulfonamides in the drinking water and food.

Symptoms.—In most cases, the animals died without showing symptoms. When they were checked and given their evening feed they appeared to be eating and normally active. The following morning, animals would be found dead in the nest box. A few showed loss of appetite and diarrhea twenty-four to forty-eight hours preceding death.

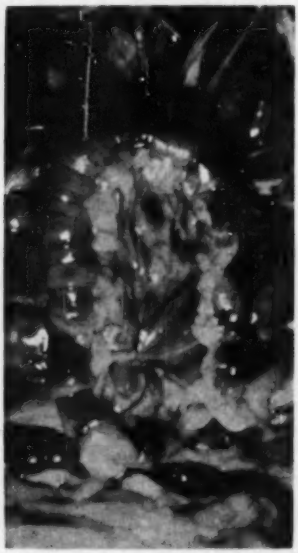

Fig. 2—Extensive intussusception of the colon and rectum which characterized the acute form.

Postmortem Laboratory Investigation.—Of 30 carcasses submitted for laboratory study, 24 showed macroscopic lesions of the intestines and liver (fig. 1, 2, and 3); and 6 revealed no macroscopic or bacteriologic findings. *Pseudomonas aeruginosa* and *Salmonella typhimurium* were isolated from the 24 carcasses. Healthy chinchillas were inoculated subcutaneously with 0.3 ml. of an eighteen-hour broth (live culture derived from these chinchilla carcasses) and they died within twenty-four to forty-six hours. The same type of bacteria was isolated from these animals, suggesting its pathogenicity.

On April 24, the herd was divided into two groups of 400 animals each. Group 1 was injected with a stock tissue vaccine which consisted of killed bacterins of *Pseudomonas aeruginosa* (20%), *Pasteurella multocida* (20%), *Streptococcus pyogenes* (20%), *Salmonella typhimurium* (20%), and killed tissue vaccine (20%).

Fig. 3—Small multiple abscesses (left) on a section of colon, and (right) hard fecal material (impaction). This was characteristic of the chronic form.

Group 2 was held as a control. Tables 1 and 2 demonstrate the results obtained.

Because of the high mortality in control group 2 of 400 chinchillas, it was impractical to withhold vaccination during the entire ten-month period, and on July 20, 1949, we vaccinated these animals.

All chinchillas 30 days of age or older, pregnant and nursing animals, were vaccinated. Babies 30 days old were administered doses of 0.1 cc.; chinchillas 2 to 4 months old, 0.2 to 0.25 cc.; chinchillas 4 months old and adults, 0.25 to 0.33 cc. A series of three injections, over a period of three to four weeks were required to obtain

TABLE 1—Mortality in Group 1 Before and After Vaccinating*

Month	Deaths		Total deaths
	Adults	Young	
February, 1949	15	10	25
March, 1949	22	18	40
April, 1949	21	23	44
May, 1949	5	0	5
June, 1949	3	0	3
July, 1949	4	3	7
August, 1949	3	1	4
September, 1949	1	1	2
October, 1949	1	2	3
November, 1949	0	0	0
December, 1949	2	0	2
January, 1950	2	1	3
February, 1950	1	2	3

*The first vaccine was administered April 24, 1949. Beginning Sept. 1, 1949, deaths were attributed to natural causes such as injuries from fights and accidents.

the desired immunity. The second injection was given seven to ten days following the first injection and the third injection two to three weeks following the second.

TABLE 2—Fatalities in Group 2 (Control) Before and After Vaccinating*

Month	Deaths		Total deaths
	Adults	Young	
May, 1949	10	6	16
June, 1949	10	12	22
July, 1949	8	14	22
August, 1949	4	3	7
September, 1949	1	2	3
October, 1949	0	1	1
November, 1949	2	1	3
December, 1949	2	1	3
January, 1950	3	0	3
February, 1950	2	1	3

*First vaccine was administered July 20, 1949. Beginning Oct. 1, 1949, deaths were attributed to natural causes such as injuries.

The vaccine was administered intramuscularly with a sterile, 24-gauge needle. The ventral posterior surface of the hind leg was used for the site of injection.

A booster shot of similar dosage was administered to all animals in December, 1949, and February, 1950. We believe that the antigenic value of a tissue vaccine is worth while and, therefore, have combined the killed cultures with it.

Reaction of Animals to Vaccine.—There was a noticeable loss of appetite for twenty-four to forty-eight hours following the vaccination, and some animals were slightly constipated. The constipation was offset by feeding an abundance of green foods. The second and third inoculations caused milder reactions than the first.

SUMMARY

The epizoötic among 800 chinchillas was caused by *Pseudomonas aeruginosa* and *Salmonella typhimurium* which were isolated from the heart blood of 24 chinchilla carcasses, indicating the cause of death. No other bacteria known to be pathogenic to chinchillas were isolated. Stock vaccine of killed cultures suspended in tissue was the only medication administered to control the disease.

Two ways to distinguish good obstetrical work from that of the handy man down the road are thorough washing and cleaning of the external genitalia and epidural anesthesia.—*D. E. Trump, D.V.M., Minnesota.*

Stilbestrol Affects Gastric Secretion

A small dose of stilbestrol causes depression of the secretion of gastric juice in female cats but not in males. Also, the female hormones seem to depress the secretory functions of the gastric glands.—*Brit. J. Pharmacol. and Chemo., Sept., 1950.*

Virility of Spermatozoa.—The virility of spermatozoa in the genital path depends upon an uncertain span of life (motility) and the time required to arrive at the site of the ovum, which ranges from one and three-fourths to four hours—figures to bear in mind in artificial insemination.

Because the majority of surgical operations performed by veterinarians are on healthy animals and noninfected structures (castration, spaying, herniotomy, docking, ear trimming), postoperative results should be uniformly favorable.

Because only 1 of 154 animals studied failed to conceive as a result of inflammation of the uterus, McNutt and his coworkers at the University of Wisconsin conclude that "repeat" breeding is not primarily due to disease of the uterus.

Castration, vaccination, and weaning are the cause of "growing pains" in swine. To reduce set-backs to a minimum, reasonable time must be allowed between them. —*From Hog Breeder.*

Official Beginning of Veterinary Meat Inspection?—The first official mention of a veterinarian in connection with meat inspection is found in the General Rescript of Württemberg in the year 1761. It prescribed, in case of an outbreak of an animal plague, that "If a trained scientific veterinarian is established in the besirk [community], the high bailiff shall have the necessary careful inspection made immediately on the spot by him or otherwise under the immediate directions of the Chief Physician by some legitimate practicing veterinarian who has passed an examination."—*Canad. J. Comp. Med. and Vet. Sci., Aug., 1950.*

Recent Developments in the Control of Insect and Parasitic Pests

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DDT IS AN insecticide which has changed the outlook on insect pest control in many agricultural fields, but it is not a cure-all and its use becomes more limited as more is learned about its shortcomings. It remains, however, as a very effective insecticide for a number of pests.

Since the discovery of the insecticidal use of DDT, a whole series of new insecticides has been reported which may be useful in control of animal parasites. Some of these are already of proved value. Methoxychlor is one of these newer products which is related chemically to DDT and is considerably less toxic to warm-blooded animals. According to present information, it is safe for use on animals; it is not stored in the animal or excreted in milk as is DDT. TDE is another insecticide related to DDT, but it has shown little promise against animal pests.

Benzene hexachloride (BHC), as originally tested and as the technical grade material produced today, can not be used on animals. The technical grade material contains the several isomers of BHC in varying amounts. The *gamma* isomer is insecticidally active, and from an insecticide standpoint the other isomers may be regarded as impurities which give the material its disagreeable odor and are toxic to warm-blooded animals. At present, BHC which contains 99 per cent *gamma* isomer is being produced. This very nearly pure material, known as "lindane," is practically odorless, apparently imparts no off flavors to meat or animal products, and is safe to use in low concentration. As an insecticide, it is effective against many pests, but is not so long-lasting as DDT.

Chlordan, another chlorinated hydrocarbon of complicated chemical structure, is effective against many pests, particularly cockroaches. A related compound, known as "dieldrin" and formerly called "compound 497," may have a place in livestock pest control, but has not been sufficiently studied for accurate evaluation.

Parathion, TEPP, and related materials are much too toxic for use on animals.

The various mixtures of pyrethrum and piperonyl butoxide or other synergists show promise; they are completely safe for use on animals and are effective insecticides, although they lose their effectiveness in a short time.

These are the more important insecticides being studied. Current recommendations of these various products for control of insect parasites and related pests of animals will be discussed here.

CONTROL OF CATTLE MANGE, LICE, AND GRUBS

Currently, there is considerable interest in the control of cattle mange. Most of the research in connection with the present recommendations for mange control was done in New York State under the direction of Drs. H. H. Schwardt and D. W. Baker who found lindane effective for control, but not for eradication, of the mites which cause mange.

Recommendations are: Use 1½ lb. of 25 per cent wettable lindane powder in 100 gal. of spray; apply 2 gal. of this spray to each adult animal with two applications, seven to ten days apart. According to the New York workers, about 90 per cent of the herds sprayed had some mange again within six or eight months and other herds remained free for longer periods. Analysis of milk from herds sprayed with this dosage showed between 1 and 2 p.p.m. of lindane in the milk for two days. The lindane then tapered off rapidly and after four days no significant amounts could be found.

The spray should be applied with a power sprayer which has a good agitator to keep

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Journal Series Paper of the New Jersey Agricultural Experiment Station, Rutgers University, the State University of New Jersey, Department of Entomology, New Brunswick.

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This paper was presented at the sixty-sixth annual meeting of the Veterinary Medical Association of New Jersey, Feb. 2-3, 1950, in Trenton, N.J.

the powder suspended. Pressures of 100 to 150 lb. at the pump are sufficient, and any misting nozzle is satisfactory. Animals should be wet very thoroughly from head to hoof on all sides. Animals under 6 months of age should not be treated.

This treatment with lindane for control of mange on dairy cattle will also control lice. Only a single treatment is necessary for louse control. In New Jersey, for control of cattle lice only, we recommend two applications fourteen days apart of dusts containing 0.5 per cent or more of rotenone. A 5.0 per cent activated sabadilla dust is also recommended. The dust can be applied from a plunger or puff-type duster fitted with a large flat nozzle or from a shaker can. Use about 3 oz. of dust with the mechanical duster or twice that amount from a shaker can.

Cattle grubs are also best handled by use of rotenone dust or spray applied to the backs of animals in early spring, as soon as grubs start to leave the animals, and with a second application a month after the first. Hand application while ruffling the hair to sift the powder to the skin is best. Dust containing about 1.5 per cent rotenone is satisfactory. For sprays, 7½ lb. of derris or cube powder (containing 5% rotenone) should be applied thoroughly from a power sprayer at 400 lb. pressure. DDT, lindane, chlordan, and the other new insecticides (with the exception of pyrethrum-piperonyl mixtures) have shown no promise in cattle grub control.

CONTROL OF POULTRY PARASITES

For poultry parasites, lindane has been found effective. As little as 0.5 per cent lindane applied as a roost paint killed all lice on birds. A 1.0 to 1.5 per cent concentration of lindane, as a roost paint only, is being recommended. This same treatment will control the common poultry mite if the infestation is light. However, with a heavy infestation, more extensive treatment with 1.5 per cent lindane emulsion is necessary, including spraying dropping boards, the walls around roosting areas, and inside of and around nests. Litter in nests should be removed and destroyed before spraying. This treatment will not impart a disagreeable odor or taste to eggs, but care must be used to treat with lindane and not with technical grade BHC.

The feather mite of poultry can not be controlled with either of these treatments, since the mites remain on the birds. Nicotine sulfate applied liberally as a roost paint, or 2.0 per cent lindane emulsion applied to the fluff above and below the vent, have effectively controlled this pest. The lindane treatment would probably eliminate the feather mite if infested male birds were treated with the emulsion when brought in from range in the fall. It is well known that, except under conditions of extreme infestation, male birds are the only ones infested by this mite. The lindane treatment of birds mentioned above caused no apparent injury to birds or eggs.

Fleas in poultry houses, as well as in homes, can be best controlled by 10 per cent DDT powder — applied 4 oz. per 100 sq. ft. Both larval and adult fleas will be killed by this treatment, if it is thorough.

CONTROL OF FLEAS AND TICKS ON DOGS

Fleas on dogs and cats can be controlled with rotenone powders or washes. On dogs, 10 per cent DDT dust can be used for fleas, but may not be used on cats, since cats wash themselves a great deal and may ingest a lethal dose of the poison.

Ticks on dogs probably will not be controlled with DDT; the safer rotenone is recommended instead. A dust containing 4 per cent rotenone will kill ticks, but for protection from infestation, two applications a week are necessary. Better protection is obtained by using a dip or lotion prepared by adding 2 oz. of derris powder (4% rotenone) and 2 oz. of a good soap to 1 gal. of water.

Either of these treatments will control the two ticks which infest dogs in New Jersey, the American dog tick (*Dermacentor variabilis*) and the brown dog tick (*Rhipicephalus sanguineus*). The American dog tick is an out-of-doors pest in the summer and is capable of transmitting Rocky Mountain spotted fever. Consequently, it is important aside from injury to dogs, since it attacks human beings also. DDT can be used along paths and roadways for control of this tick which tends to congregate in places frequented by its hosts. A treatment of 4-ft. strips along both sides of such avenues of travel with 10 per cent DDT dust or 0.5 per cent DDT spray will control ticks for about two weeks. Apply 100 gal. of spray or 20 lb. of dust per acre.

The brown dog tick does not attack human beings and is not a pest out of doors. It is, however, frequently a pest in homes and kennels. As such, this tick is extremely difficult to control. The engorged female lays about 6,000 eggs in some protected place and when these hatch into the tiny seed ticks, the housewife suddenly is confronted with a real problem. Apparently, most household infestations start after a dog has been quartered in a kennel where a mild infestation of the ticks goes unnoticed or is neglected.

With the new insecticides, fumigation is no longer necessary. DDT or chlordan can be applied as residual treatments. Apply 5.0 per cent DDT or 4.0 per cent chlordan emulsion or solution to areas where ticks are found. These will also be places the dog frequents most. Emulsions are to be preferred to solutions in most places and chlordan is more satisfactory than DDT. Applications should be made once every two weeks until all ticks disappear. In kennels, the brown dog tick can be eliminated by treating walls and other surfaces with chlordan once a month. With residual treatments against these ticks, special care should be taken to treat cracks and crevices where the pests might find a place to hide and lay eggs.

FLY CONTROL

This is a phase of insect control of considerable interest and much confusion. There are two reasons for this. One is the matter of safety of the insecticides to warm-blooded animals, and the other is the matter of resistance to insecticides. Before considering these, we must mention that sanitation is most important in fly control. Proper disposal of wastes and cleanliness around the premises are essential if flies are to be kept to a level where insecticides will give adequate control.

With the new residual insecticides, long term fly control is possible if applications are made properly. At present, two products, methoxychlor and lindane, are recommended for fly control in dairy barns and milk-processing plants. These sprays should be applied in such a fashion that the walls and ceiling are wet to the point of "run-off." Methoxychlor, 50 per cent wettable powder, is used at the rate of 40 lb. per 100 gal. of water. Lindane is used either as 8 lb. of 25 per cent wettable powder or 5 qt. of 20 per cent emulsion per 100 gal. of water. Wettable powders must be applied from a power sprayer having a good agitator. The emulsion can be expected to give fly control for about six weeks with methoxychlor and for four to six weeks with lindane.

DDT is not recommended for use in milk plants and dairy barns because of the possibilities of contamination of milk. Such contamination, even with small amounts of DDT, might in time prove detrimental to human beings. Officials of the U. S. Food and Drug Administration tell us that DDT can be accumulated in the fat in dangerous amounts and is secreted in the milk. Even though there are only small amounts of DDT in milk, when such milk is made into dairy products the DDT is concentrated many times and the product is much more dangerous than the fluid milk. These officials consider the hazard great enough to warn against use of DDT in connection with dairy animals or milk. In other places on the farm, DDT at the rate of 20 lb. of 50 per cent wettable powder in 100 gal. of water can be safely used for fly control.

Resistance of flies to insecticides has been a much-discussed phenomenon in the past two or three years, first with DDT and more recently in some areas with methoxychlor and lindane. Many of the early field and laboratory tests of resistant flies were made in the laboratories at Rutgers, and these studies are being continued. It seems certain that resistance in flies is not a simple thing, but that there may be several different types, depending on the insecticide used or the particular fly strain being studied. So far as we know, flies showing resistance to DDT will also show some degree of resistance to methoxychlor, but the reverse is not true. DDT-resistant flies show no (or very little) resistance to lindane, chlordan, and similar insecticides. Also, from other areas we learn that lindane-resistant flies show resistance to some other insecticides, and where both DDT and lindane have been used, flies resistant to both have appeared.

From laboratory studies, we have found that DDT resistance disappears from a fly strain rather slowly but can be built up in the strain very quickly by selecting resistant individuals—the survivors of exposure to the insecticide. If this same thing holds true in the field, rotation of insecticides is much less likely to be successful.

Our studies indicate a number of other problems, in connection with resistant flies, which may have a bearing on fly control. However, failures are not always due to resistant flies, but are often the result of lack of sanitation or faulty application of the insecticide.

Field studies during the summer of 1949 on DDT, methoxychlor, lindane, chlordan, and dieldrin showed that all are effective fly-control agents when properly applied. Resistant flies appeared in three barns where DDT was used. These barns had a history of two years of previous residual applications of DDT. Methoxychlor gave about six weeks of fly control in our tests but elsewhere failed in much less time, probably because it was applied soon after whitewash or in the presence of DDT-resistant flies. Lindane, chlordan, and dieldrin gave a month of fly control. Lindane was the best of the three products, killing flies quickly and leaving no odor in the barn. Neither chlordan, which killed slowly and left a persistent odor, nor dieldrin, which also killed slowly, have been approved for use in barns and dairies. In all of these barns, food troughs, watering cups, and feed were carefully covered before spraying. Samples of milk collected from herds housed in barns sprayed with DDT, lindane, chlordan, and methoxychlor were anaylzed and showed no contamination with the respective insecticides except in one barn sprayed with DDT. In this barn, DDT found in the milk was probably due to contamination in handling the milk rather than to secretion of DDT in the milk by the animal.

The above discussion of flies applies largely to the housefly and the other flies associated with it as nuisance pests in barns and milk-processing plants, and not to biting flies. Of the biting flies, the hornfly is easily controlled on animals by spraying them once a month with 0.5 per cent methoxychlor (8 lb. of 50% wettable powder to 100 gal. of water) applied at the rate of 2 qt. per animal.

Stable flies (*Stomoxys calcitrans*) and horseflies (Tabanus) are not controlled satisfactorily with methoxychlor or other residual sprays. Some are killed, but they injure the animals with their biting before receiving a lethal dose of the poison. Research has not yet discovered a satisfactory repellent spray. A repellent is to be preferred for use against these blood-sucking flies, because it would prevent the pests from damaging their hosts.

SUMMARY

It is evident that much progress has been made in controlling the wide variety of insect and arachnid pests which attack animals. Several of the new insecticides are recommended for these pests, but for others the older treatments are to be preferred. It is apparent that these new insecticides have produced new problems. We need to know especially what may be the hazards to man and animals with the use of these new and powerful products. The problem of resistance to insecticides also needs further careful study and is evidently a problem of increasing importance.

Until all of these insecticides have been adequately investigated, it is well to remember that they are poisonous materials which should be used with caution and according to directions.

Canine Histoplasmosis

The symptomatology of canine histoplasmosis is often obscure but may include one or more of the following symptoms: chronic cough, diarrhea with semiliquid blood-stained feces, loss of weight, weakness, body temperature within normal range, radiopaque lesions in the bronchial nodes and lungs, enlarged abdomen, enlarged liver and spleen, ascites, enlarged abdominal lymph nodes but peripheral lymph nodes usually unaffected, irregular leucocytosis, icterus, anorexia, vomition, and anemia.

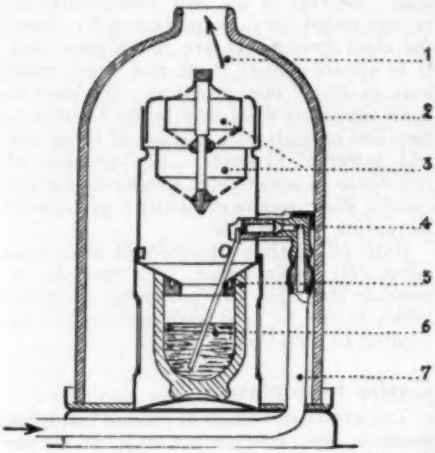
The course varies from one month to a year or more.

Lesions consist of ulceration or submucosal nodules in the oral cavity, esophagus, stomach, and intestine. The histoplasmin skin test, along with chest radiographs and biopsies, assist in making a diagnosis.

Treatment has been ineffective with penicillin, sulfathiazole, sulfaguanidine, nicotinic acid, fuadin, potassium iodide, and crude liver. Some hope is held out for streptomycin, bacitracin, and aërosporin because they work *in vitro*.—*C. R. Cole, D.V.M., and R. F. Cross, D.V.M. (Ohio), at the Nineteenth Annual Conference for Veterinarians, Columbus, Ohio, June, 1950.*

Aerosols: Microfog Medication

Notwithstanding that aërosols were signalized in England for the first time, little if anything in English was ever written about their use in veterinary medicine. Webster defines *aërosol* as a suspension of solid or liquid particles in a gaseous



—Courtesy of Rec. de Med. Vet.

Fig. 1—F. Gauchard's medical aerolizer. (1) Opening toward the mask. (2) Expansion bell. (3) Filters. (4) Agitator. (5) Glass vat. (7) Air channel.

medium. The old practice of steaming horses with a nosebag in treating infections of the upper air passages was an example of aërosol therapy in the broad sense of the term. The true aërosol of modern medicine, however, has a more specific meaning. At any rate, the steaming of horses with scalding-hot bran in a nosebag was regarded only as a local treatment of the nose and throat, whether phenol, thymol, menthol, or other aromatics were used to medicate the steam, whereas, the modern aërosol may not only act locally to the full depths of the bronchial tree but also systemically through circulatory absorption of the medicinal agent contained. At least, the notion of transpulmonary medication for general ailments is being widely entertained and discussed.

In the therapeutic sense, the true aërosol is a fine dust of medicinal particles, 1 to 2 μ in diameter, the surface tension of which prevents flocculation, agglutination, or attachment *en masse* on their way downward. They roll along like marbles, unhindered by the cilia, to the remotest bronchial destination, arriving as dry as particles of quinine delivered to the stomach in a capsule.

Though antibiotics and certain sulfonamides were first to be "aërosolized", others are in use, have been tried experimentally, or will be tried. These include insulin, adrenalin, ephedrine, ferrous sulffate, sodium bicarbonate, potassium iodide, methylene blue, aluminum, salicylic acid, and the solids of spa waters. The curative dynamics of the world's famous springs (Vichy, Baden Baden, Saratoga, Little Rock) may be aërosolized and brought to every home and hospital, according to one prediction. Aërosol therapy is not approaching that degree of perfection in veterinary medicine. At the moment, the aërosols of penicillin, streptomycin, and sulfanilamide have proved their virtue in

—Courtesy of Rec. de Med. Vet.

Fig. 2—Apparatus for the administration of aerosols to dogs: aerolizer (fig. 1.), rubber tube, and mask.

human medicine and in the treatment of respiratory infections in dogs at the Alfort clinic,* where apparatus for making and applying these aërosols have been perfected for use (in dogs).

There is much in favor of using the respiratory tract for the administration of medicine, rather than the other parenteral routes or the digestive tract where chemical changes interfere with the action of drugs.

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*Robin, V., and Cavaye, M.: The Aërosol Medicaments: First Trials of Application in Veterinary Therapeutics (trans. title). Recueil de Médicine Vétérinaire, *126*, (Jan., 1950):5-16.

In the rich capillary system of the lungs, the unchanged drug contacts the entire volume of blood every few minutes. [In the human adult, 45 lb. of blood passes through the pulmonary capillaries every minute.] The advantage over the other parenteral routes is obvious if the ailment is respiratory. Based on available knowledge, the microfogs promise to become the drugs of choice in the treatment of respiratory infections, at least.

The aërosols may be suspensions of the chosen medicinal agent in air, oxygen, nitrogen, or carbonic acid, and they may be employed in repeated doses as indicated or by impregnating the atmosphere of the room in which the patient is kept. The physics, chemistry, and brownian movements of aërosols are not simple. The true ones neither take on nor liberate moisture. A blotter or cigarette paper exposed to them remains perfectly dry and a mirror so exposed does not blur. The curative quality is tested that way. The finer the particles, the better the dryness becomes and whatever may be the medium in which they are suspended, they never precipitate, break, or clump. The mechanisms of these phenomena are not easy to explain clearly, significant as they must be to the professor of physics, and important as they may become in the veterinary clinic.

At the moment, the aërosol potential remains to be developed in our field, both in respect to the treatment of respiratory infections and as a general method of administering medicines. In other words, the justifiable indications are still few and modes of use remain to be perfected.

Pig Losses in 1950

Pig losses were unusually heavy on farms in Illinois and southern Wisconsin in the summer of 1950. The symptoms most commonly described were those of encephalitis or other derangement of the central nervous system. There is no uniform opinion regarding the probable cause, as the condition has occurred in herds vaccinated with serum and virus, in herds vaccinated with vaccine, and in unvaccinated herds. It has been seen in herds within three weeks of vaccination and also in herds a year after vaccination with virus and antiserum.

The general recommendation among practitioners seems to be to increase the dosage of serum 50 to 100 per cent, and to give double doses of serum at the first sign of a break of any kind.

Several investigators agree that this is a virus infection, but it is not known whether it is a variant of hog cholera or a related virus.

Magnesium Sulfate in Acetonemia

Case reports by Burrow and Lewis (*Vet. Rec.* Aug. 26, 1950: 510) indicate that the subcutaneous injection of magnesium sulfate has a very helpful effect on cases of simple and complicated acetonemia in dairy cattle. The treatment consists of dissolving 3 oz. of magnesium sulfate in 16 oz. of water, and this is administered at body temperature divided into 200 injections, in front of and behind the shoulder. The mechanism of the action is imperfectly understood, and the authors observe that when the intravenous injection of glucose is supplemented with subcutaneous injection of magnesium sulfate, the cases respond a little more quickly than when either treatment is used alone.

When treating swine for ascarids with sodium fluoride in the daily trough ration, the client should be told to keep chickens away from the medicated feed.—*Jen-Sal J., Sept., 1950.*

"Rabies can never be controlled until the disease is eliminated in animals, and this can be accomplished only by the elimination of stray animals and the annual vaccination of household pets," says *Illinois Health Messenger* (Sept. 15, 1950).

Fuadin and Anthiomaline.—In critical trials of these two trivalent antimony compounds, Moralis and coworkers (*Puerto Rico J. Pub. Health and Trop. M.*, Dec., 1949) found them to have equal value in the treatment of Manson's schistosomiasis. The chemistry and relatively nontoxic action of fuadin is well known for its parasitotropic action in heartworm disease of dogs. Anthiomaline, an antimony-lithium-sulphur combination, is newer and obviously worthy of trial in this and other parenteral parasitisms.

Johne's Disease Treatment

Cattle infected with *Mycobacterium paratuberculosis* are being treated with massive doses of vitamin D_2, calcium, copper, and cobalt. Healthy animals and suitable controls are included in separate groups. R. M. Smythe presents extensive observations but no results in *The Veterinary Record* (July 29, 1950).

Is Equine Periodic Ophthalmia a Leptospirosis?—Classical research carried out by Yager, Gochenour, and Weimore of the Army Medical Department Research and Graduate School, Washington, D.C., confirmed the work of Heusser of Germany to the effect that the blood of over 90 per cent of horses affected with periodic ophthalmia contains leptospiral antibodies. Though none demonstrated the presence of Leptospira, their studies, at least, open an interesting field for exploration.

Lindane Poisoning in Calves.—Deaths of calves diagnosed as due to lindane poisoning have been reported from California and Colorado. "Too much, too early" sums up the mistakes being made by some users of lindane sprays. Stockmen experiencing losses have used the same high concentrations on animals that manufacturers recommend for spraying barn walls, or have used the spray on animals that are too young.

Diseases and Treatment of Feedlot Cattle

Feeder cattle need a feeding period of sixty to ninety days, unless they are over 1 year old, when a period of 120 days or more will be required. The diseases most commonly met with are shipping fever, parasites, scours, and pneumonia. Shipping fever can be prevented by use of vaccine two weeks or more before the animals are exposed to infection, or by the use of serum after symptoms have appeared. The minimum dose of antiserum should be 30 cc. Sale barn visitors are a big factor in spreading shipping fever.

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Among the parasites, anaplasmosis is probably the most important and the most costly.

When treating a few animals, or when treating a few differently from the group, it is advisable to chalk those animals which are being handled differently, otherwise the owner will invariably claim that the same animal is being treated a second time.

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Intravenous injections should not be tried on beef cattle unless a chute is available for this purpose. Any other method of handling the animals causes so much excitement and commotion that it probably does more harm than good.

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Isolation prevents more headaches for owners and veterinarians than any other one procedure.

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Foot rot may be controlled by mixing completely air-slaked lime with shavings and placing these in a box at the doorway or at the gate, so that animals must walk through them in moving back and forth.—*John Dewar, D.V.M., Cherokee, Iowa, at the Northern Illinois V.M.A., Rockford, Sept. 27, 1950.*

Rinderpest Control in Japan

Three strains of attenuated rinderpest virus (lapinized) were found distinctly less pathogenic to calves than the original bovine strains. However, lethal infection was still observed in some of the animals and even these strains can not be recommended for single use as a vaccine among Japanese cattle. These are the conclusions drawn by J. Nakamura of the Nippon Institute for Biological Science, Tachikawa, Tokyo.

The early symptoms of osteomalacia in the bovine, equine, and porcine species are vague. Often the first evidence of the severest case is unaccountable fracture — ribs, pelvis, or long bones — without violence. The trend is toward an increasing higher incidence of structurally deficient bones in farm animals in the face of forced growth and reproduction.

Plastic Teat Tube.—A plastic, self-retaining teat tube invented by H. J. Larson (CVC '18) of Minnesota is described in *Feedstuffs* as a capped, nonirritating siphon that tends to improve hard milkers. The cap is removed only for milking. A perforation in the tube permits the injection of drugs into the milk cistern.

Atrophic Rhinitis in Swine

The agent responsible for infectious atrophic rhinitis in swine has not been determined. The disease is characterized by sneezing and catarrhal or bloody nasal discharge, shaking of the head, rubbing the nose on the ground, holding the head to one side, and general unthriftiness, with stunting of the surviving animals.

In the differential diagnosis, it is important not to confuse this condition with "bull nose."

In general, treatment has been unsuccessful and the most important control measure is to market the entire herd and not restock for several months.—*Univ. Illinois Exten. Vet., Oct. 24, 1950.*

Obstinate Skin Diseases of Dogs

Alopecia is frequently caused by endocrine imbalance and the abnormality of the reproductive system which results from such imbalance.

Acne is a bacterial infection of the skin often resulting from some hidden pocket, such as may be found in the anal glands, the sheath of the male, or the vagina of the female. Such hidden pockets reinfect the animal after the condition has been cleared up.

Acanthosis nigricans is also caused by an organism which may be harbored in the anal glands. The condition only can be permanently cured by surgical removal of the glands.—*C. P. Zepp, Sr., D.V.M., New York City, at the Postgraduate Conference for Veterinarians, Univ. of Wisconsin, June 21, 1950.*

Hypersensitivity in Animals

Hypersensitive and allergic states are manifested by a wide variety of pathologic phenomena, Dr. C. A. Brandly and his coworkers told a conference of veterinarians at Madison in June, 1950. All workers agree that the allergic states are important or significant as well as interesting, but all workers also agree that the relations and implications of the various phenomena are not well understood. Allergy, as the term is usually applied, means an altered capacity to react as influenced by previous experience—it implies prior contact with the same material or one closely related to it chemically.

Allergy may be of the immediate or urticarial type, which is manifested by anaphylaxis (either systemic or local), asthma, hay fever, hives, unusual drug sensitivities, disturbances of the gastrointestinal and/or genito-urinary systems. This type is usually associated with circulating antibodies, wheals, and erythema of the skin. Antihistaminic products seem to have a generally favorable effect on the course of these conditions.

Allergy may also appear as the delayed or tuberculin type which is most commonly exhibited toward microbial products, drugs, and the so-called postvaccinal encephalitis. The response to exciting agents in conditions of this type is likely to be progressive for one or two days, and the course is not modified fundamentally by any of the histaminic products.

There may be combinations of the immediate and delayed types, as was shown in demonstrations prepared for the veterinarians who attended the conference.

Halogeton Poisoning in Western Sheep.—A poisonous range plant of foreign origin, *Halogeton glomeratus*, is spreading rapidly over ranges of the Intermountain states and has killed many sheep, according to Dr. L. R. Vawter of the University of Nevada. The poisonous factor is oxalic acid salts. Death is due to a quickly overwhelming loss of inorganic serum calcium. By the time symptoms appear, irreparable damage has been done. Attempts to treat stricken animals with calcium compounds have not been successful.—*California Vet., July-Aug., 1950.*

Skeletal Abnormalities in Chickens

When insulin is injected into chicken embryos during the first week of incubation, it produces a definite hypoglycemia. This deprives the tissues of an essential constituent, mucoprotein, and results in very marked stunting of the cartilaginous skeleton. It also interferes with normal development of the cornea, vitreous humor, and sclera. The latter has a special inner layer of hyaline cartilage.

Interference appears as deformity, ease of fracture, stunted growth, and lack of subperichondrial ossification. Sometimes there is elongation of the upper beak, "parrot beak."—*British Med. J., Aug. 12, 1950.*

NUTRITION

Beef Cattle Nutrition

Fermentation in the paunch is a normal process which results from the growth and activity of bacteria and Protozoa which make their home in the rumen. These organisms may constitute 10 per cent of the dry weight of paunch contents, and may be as numerous as 100 billion /1 ml. The activity of these organisms is directed against three distinct types of nutrients: (1) enzymatic digestion of the roughage and celluloses; (2) the synthesis of the B vitamin fractions; and (3) synthesis of the amino acids from the simpler nitrogenous compounds. These three functions permit the cow to digest otherwise useless roughage and forages; they enable the animal to produce its own vitamin B fractions from otherwise deficient rations; and they permit it to use nitrogenous chemicals in the building up of animal proteins, *i.e.*, to make good protein out of a poor protein.

Because complete digestion in cattle is so dependent upon the microflora in the rumen, it is important that the nutrients required directly by the microörganisms themselves be considered in compounding the ration fed. In this respect, it is important that protein *per se* is an essential nutrient for rumen microörganisms engaged in roughage digestion. At the same time, the bacteria are able to use some of the simpler nitrogenous chemicals along with the protein to make more and better quality of protein for animal use. However, there is a close correlation between the numbers of bacteria present in the rumen and the amount of roughage digestion taking place. Study in this field is going on through the use of rumen fistulas in living animals, and the artificial rumen which can be used in the chemical laboratory.

In this connection, it is important to know that cobalt is an essential mineral nutrient of rumen bacteria. Therefore, in cases of cobalt deficiency in cattle, the subcutaneous and intravenous injections have been less effective than the oral administration of cobalt solutions. Many of the metabolic diseases of ruminants hinge upon the adequate nutrition of the microorganisms in the rumen. Among these metabolic diseases which are not yet fully explained are milk fever, grass tetany, pregnancy disease in sheep, ketosis or acidosis in cattle, and others. Some question exists regarding the basic cause of bloat and some of the fertility problems. These may eventually turn out to be metabolic disturbances also.—*Wise Burroughs, Ph.D. (Ohio), at the Nineteenth Annual Conference for Veterinarians, Columbus, Ohio, June 14-15, 1950.*

Deficiency of Mineral Elements.—One of the big problems of clinical veterinary medicine is correcting deficiencies of the mineral elements and of the biochemic equilibrium responsible for their utilization. Intricate biological processes (respiratory, digestive, metabolic, neuro-vegitative, etc.) of meat and milk animals are involved and these are closely related to the hunger stalking around the world and the continuous depletion of the soil of its mineral elements.

Amino Acid Research

Urea may be used satisfactorily in the rations of ruminants when it forms a part of a ration composed of not more than 12 per cent protein equivalent. This is true when the urea forms not more than 25 per cent of the total nitrogen intake in the form of preformed protein.

Efficient protein nutrition depends more on the variety and completeness of the mixture being presented to the tissues than on the total amino acid content of the feed or ration.

Although the problem of computing protein nutrition requirements on the basis of amino acids is too complex for everyday use, nevertheless the knowledge of amino acid constituents of the various feeds makes it possible to formulate a more complete protein mixture. Such a mixture which is efficient and economical should be used in

all instances. Possibly commercial supplies of amino acids may become available at a price which will permit addition of one or more specific amino acids to a mixture. This, however, is not yet the case. For the time being, it seems highly probable that attention will be concentrated on a few of the amino acids which are most likely to be deficient, rather than in the total amount of each of the amino acids being supplied by the feed.—*Cornell Nutrition Conference, Nov., 1949.*

Stock Feed from Wood

From time to time, nutritionists discuss the potentiality of wood as a means of increasing the stockpile of feed. Sawdust, shavings, chips, limbs, and other wastes of lumbering, as the saying goes, have nutritive ingredients that ought to be processed into edible feed. They contain cellulose and the hemicelluloses, hexosan and pentosan, that the bacterial action of the rumen could convert into nourishing sugars.

The food chemist can remove the lignin, resin, tannin, and other inert ingredients, and a pulp comparable to that made on a gigantic scale in the fabrication of paper can be mixed with cheap fodder to make a nutritive ration, even though not completely digestible. Moreover, the resulting residual lye contains small amounts of sugars capable of fermenting.

The total sugar in wood is not negligible as seen in the production of methyl alcohol and, more recently, feed yeast. In fine, the celluloses of wood can be converted to sugars by hydrolysis, and its juices purified and concentrated into alimentary molasses and inoculated with yeasts. The chemical and economic details are not for here. Suffice to say that the production of cattle feed from wood is not a myth. There is a factory near Mayence, France, producing from wood 100 tons of cellulose and 14 tons of dry yeasts per day.—*From Agronomie Tropicale, Occidental French Africa, March-April, 1949.*

Vitamin B_{12}, or whatever else is contained in the so-called APF supplements, will not take the place of animal protein concentrates, but will fit into our over-all supplies of essential supplements to balance rations.—*Feedstuffs, Aug. 19, 1950.*

Vitamin C in Virus Diseases

Large doses of ascorbic acid (1,000 to 2,000 mg. every 2 to 4 hours) administered intravenously to human poliomyelitis cases are reported to produce a drop in temperature within one day, and when continued at six-hour intervals the patients were "clinically well" in three days. Says *Medical Times* (August, 1950:349), measles, mumps, and virus pneumonia responded with complete recovery within one to three days. Chicken pox and virus encephalitis also responded well.

(This suggests that work with virus disease of animals might be in order.)

APF and Antibiotics

Although the mechanism of their action remains obscure, data clearly show that when supplemented alone the synthetic vitamins, vitamin B_{12}, streptomycin, and aureomycin each produced a favorable effect on growth. The greatest response was from vitamin B_{12}. The various factors act in such a way that their effects are additive. Highest gains were achieved when the vitamins and vitamin B_{12} were fed in combination with streptomycin or aureomycin.

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Vitamin B_{12} is the essential part of the animal-protein-factor complex for reproduction in poultry.

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Horsemeat meal and meat scrap were found to be comparable in nutritional value, and their supplementation with lysine resulted in growth almost as rapid as that obtained with fish meal in chicks.

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APF did not appear to be of any value for calves weaned from whole milk at 28 days of age, when gains in weight, height at withers, and feed efficiency were compared at 63 days of age.—*Res. and Exper. Bull., 226, Am. Feed Mnfr. A., Inc.*

Transfer of Rumen Fluids

Fresh digestive juices obtained at slaughterhouses from normal bovine stomachs get the nourishment factory going again, comments *The Aberdeen-Angus Journal* (Aug., 1950) in reporting on cases treated. Transfer of rumen fluids deserves therapeutic rank with, and warrants simultaneous use with, calcium gluconate, sulfonamides, and antibiotic drugs.

EDITORIAL

1950 in Retrospect

This is the time for taking inventory of the past year and reviewing the prospects for the one ahead. Taking stock of physical assets is now an almost universal procedure. The advantages of taking inventory of the mental and intangible assets have not been recognized to an equal degree—although they can be equally important.

In reviewing the year just closed, some subjects prominently discussed have affected professional behavior during the year, and promise to do so throughout the coming years.

Disease Problems

Ketosis, particularly its etiology and treatment, will probably achieve a lasting spot on the record of 1950 because, during the year, it was shown that an extract of the adrenal cortex (cortisone) serves to bring the affected animal back to a normal balance. The mechanism by which this is accomplished is not well understood, but undoubtedly will be clarified so that it can be explained logically and will then be used more widely and effectively.

Hard pad disease of dogs, it is evident, will eventually be classed among one of three types: (1) The disease is caused by the virus of canine distemper which has been slightly changed by mutation or other genetic alteration; (2) the disease is caused by the virus of canine distemper, and the hard pad manifestations are produced by secondary invaders; (3) the virus of hard pad disease is closely related to that of Carré, but not identical.

Vaccination of animals may be completely revised if a new type of aërosol vaccine proves as effective in field trials as it has in small experiments. Used to a limited degree against Newcastle disease in poultry, this reversal of the usual biologic warfare technique offers some hope of effective and easy immunization.

Foot-and-mouth disease can now be diagnosed on the basis of a complement-fixation test. The complement-fixation technique has been recognized for many years, but has not previously been applied to differentiate between foot-and-mouth disease and other vesicular diseases of animals. Eliminating the need for animal inoculation tests has greatly shortened the period required for definite diagnosis.

The antibiotic agents and their relationship to the feeding and growth of animals have demanded much attention. Present indications are that these substances are more valuable when fed to diseased animals than when fed to healthy animals, but clarification is needed.

Wobbles is a condition which affects colts, and particularly among the racing studs. Work reported during the year tends to show that high cholesterol is always present in the blood of affected colts, and that this is frequently, if not universally, related to thyroid dysfunction and a disturbance of the reticulo-endothelial system.

Hog cholera is an important disease in the practice of many veterinarians. A proposal offered during the year calls for the establishment of a committee which would study the disease. The economic value of the tuberculosis and brucellosis programs among dairy cattle has called the attention of swine raisers to the possibilities of a similar campaign to control, reduce, and eventually eliminate hog cholera.

Rabies is entitled to a place among the memories of 1950, largely because the virus of the disease has been adapted to culture on chicken embryos. The vaccine produced in this way has been subjected to some field trials, and the results will determine the future status of rabies.

Brucellosis enters into the memories because it has been definitely demonstrated that *Brucella abortus* can be transmitted in the semen from an infected bull to susceptible heifers and cows.

Insects which develop resistance or tolerance to insecticides are important to veterinarians. Survival of some insects in each spraying campaign has resulted in

the development of large insect populations which remain resistant to this same insecticide. Successive use of several insecticides has produced strains which are resistant to a number of insecticides. All of this information serves to emphasize, again, what veterinarians have long known, namely, that the so-called wonder drugs and miracle medicines are not substitutes for cleanliness, good management, and good feeding.

There still remain in the world many millions of people who would rely on the magic of the medicine man rather than on the firm but unspectacular approach through cleanliness, sanitation, individual diagnosis, and treatment based upon accurate observation and evaluation in each animal.

THE KOREAN WAR

The "police action" in Korea affected the lives of many people. Although starting out as a minor campaign—for those who were not directly involved—it has now spread to a point where it involves registration of all veterinarians up to the age of 50 (as well as physicians, dentists, and other professional personnel). Uncertainty often leads to greater disruption than actual participation, and this was true of veterinarians and the action in Korea. Because it was impossible to forecast the extent of the final action, all veterinarians were kept in a state of suspense.

DISPLACED VETERINARIANS

Many people came to the United States as displaced persons and later tried to make the most effective use of their early training. Veterinarians in this class are affected, as are all others with special training. The problem revolves around the requirement that an applicant for a license to practice must file certain information regarding his personal and scientific qualifications. Failure to meet the requirements of graduation from a school inspected and approved by the AVMA and of U. S. citizenship were the biggest stumbling blocks to D.P. veterinarians seeking licenses. These are important factors, since the licensing board in each state is charged with the duty of protecting the livestock industry, and this can be done only when qualified and responsible persons are permitted to serve as veterinarians.

The Stability of Livestock Production

The livestock inventory of the United States looms importantly in the second half of this century. According to competent economists, the margin between the mounting demand and the maximum supply of food has become narrow. That the responsibility of veterinary medicine is involved is self-evident, because the output of food is increased by a capable veterinary service. The gregarious farm animals, from which a large proportion of human subsistence is derived, would be reduced to a dangerous level without constant vigilance and intelligent ministration by veterinarians. Besides the actual poundage gained, removing the hazards of sweeping infections has invited the vast capital investment that accounts for the bigness of our livestock industry. The quantitative factor, measured by the number of animals on the farms, therefore, determines the importance of veterinary medicine at this milepost of American history. As of Jan. 1, 1950, the inventory published by the USDA was:

	1950	*1939-48 average*
Cattle	80,277,000	77,600,000
Adult cows, only	24,625,000	26,175,000
Hogs	60,424,000	61,624,000
Sheep	30,797,000	48,112,000

The figures are intended to show the stability of the food-animal industry under the unusual vicissitudes of the period. Particularly significant are the increases five years after the war. The ups and downs, such as the 2,000,000 increase in cattle last year and the decline in sheep, have their economic causes but (to repeat an old saying) "the United States is the safest place in the world to raise livestock" tells the basic truth about the livestock industry's bigness and security. That must forever be credited to veterinary medicine.

The so-called wonder drugs can not be used in livestock feeds as substitutes for sanitation on the farm. To drop standard sanitary practices and depend on the drugs is to invite costly disease outbreaks on the farm, says the American Foundation for Animal Health.

CURRENT LITERATURE

ABSTRACTS

Streptomycin and Johne's Disease

Studies indicated that streptomycin was effective in reducing the growth of cultures of *Mycobacterium paratuberculosis*. Promin, 4-aminosalicylic acid, stilbamidine diisethionate, and pentamidine isethionate were ineffective in *in vitro* studies against this organism.—[*A. B. Larsen, T. H. Van'man, and A. H. Groth: Preliminary Studies on the Effect of Streptomycin and Other Agents on Mycobacterium Paratuberculosis. Am. J. Vet. Res., 11, (Oct., 1950):* 374-377.]

Sulfadiazine in Brucellosis

The blood serum *gamma* globulin (the antibody), in the presence of serum complement, will inhibit the growth of Brucella organisms. These two agents in the presence of a low concentration of sodium sulfadiazine form a bacteri'cidal complex.—[*I. F. Huddleson, Evelyn Sanders, and L. A. Mattano: The Binding of Blood Serum Gamma Globulin by Sulfadiazine. Am. J. Vet. Res., 11, (Oct., 1950):* 366-370.]

Allergen Specificity

By producing protein precipitation, the authors were able to show that alterations of the specificities of acid-fast allergens are possible. This is another step leading up to a more accurate Johnin for field use.—[*L. A. Baisden, H. W. Johnson, and A. B. Larsen: Studies on Johnin. VIII. Preliminary Studies on the Specificities of Acid-Fast Allergens. Am. J. Vet. Res., 11, (Oct., 1950):* 382-387.]

Foot-and-Mouth Disease Vaccine

Using a new process here described, the author finds that sufficient cells in the epithelial tissue of the tongue do survive to propagate foot-and-mouth disease virus in large quantities *in vivo*. The concentration of the virus in this tissue is as great as in that from inoculated animals. The freshness of the tongue and the composition of the nutrient medium play an important part in the production of the virus. The virus has been maintained through 200 serial passages and it has been learned that the shorter the period of incubation the higher the virus yield. Ordinarily, one tongue from an adult cow will yield 4 to 8 Gm. of epithelial tissue, and this will produce about 250 cc. of virus.—[*H. S. Frenkel: Research on Foot-and-Mouth Disease. II. The Cultivation of the Virus in Explantations of Tongue Epithelium of Bovine Animals. Am. J. Vet. Res., 11, (Oct., 1950):* 371-373.]

[This process utilizes the carcasses of animals for food by withholding only those tissues from which virus can be cultivated. To a large extent, even the tongues have been available for human food after removal of the mucosa.—Ed.]

Colostral Immunity

The antitoxic titer of colostrum varies with individuals as well as with different pregnancies of the same individual, and it may be registered long before parturition in some instances—in mares as long as six months. Moreover, the drop after parturition may be rapid (2 to 4 hr.) or slow depending upon the hormonal interaction, rather than upon dilution with milk. There is no harmonious relationship between plasma and colostral antibodies. Besides the academic value of these facts, they can be turned to practical use in various ailments of the newborn.—[*E. Lemetayer: On the Subject of Colostral Immunity. Bull. Acad. Med. Vet., Jan. 1950.*]—L.A.M.

Toxicology of Aldrin

Aldrin, a chlorinated hydrocarbon used as an insecticide, was not toxic to sheep or cattle fed hay which had been sprayed with this material. The feeding period was from 169 to 213 days. Less than 4 parts per million (p.p.m.) of the drug were found in the liver and only 2 p.p.m. in the body fat of the ewe.

When the drug was fed at the rate of 7.5 to 2.0 mg. per kilogram of body weight, degenerative changes in the kidney and liver were uniformly observed and death resulted.—[*C. H. Kitselman, P. A. Dahm, and A. R. Borgmann: Toxicologic Studies of Aldrin (Compound 118) on Large Animals. Am. J. Vet. Res., 11, (Oct., 1950):* 378-381.]

Teat-Closing Mechanisms

When the wall of the teat of the cow was dissected, it was learned that the connective tissue layer between the intermediate layer and the mucosa probably should be considered as a separate layer and not a part of the mucosa. From a surgical standpoint, this means recognition of the following layers: the skin and the outer fibrous

layer, the intermediate layer, the inner fibrous layer, and the mucosa.

Tests show that during the milking process the teat walls became elongated and considerably thinner than while they were at rest. It was also learned that muscle fibers under the control of nerve stimuli probably were not responsible alone for maintaining closure of the outlet of the lactiferous duct. In fact, four structures appeared to be involved in teat closure: the muscle bundles, Furstenberg's rosette, elastic fibers, and desquamated epithelial cells.—[*W. D. Pounden and J. D. Grossman: Wall Structure and Closing Mechanisms of the Bovine Teat. Am. J. Vet. Res., 11, (Oct., 1950): 349-354.*]

Hyperkeratosis and Feed

Studies of an outbreak of bovine hyperkeratosis in a group of 160 calves led the authors to conclude that an unknown factor or factors in the particular dehydrated alfalfa hay and dicalcium phosphate fed these calves enhanced the severity of the disease. Moreover, some unknown substance or substances in corn, a vitamin A carrier, and cottonseed meal appeared to have a neutralizing or sparing effect on the severity of bovine hyperkeratosis. The authors stress, however, that these factors may not be of primary etiologic significance.—[*Carl Olson, Jr., R. H. Cook, and E. M. Brouse: The Relation of Feed to an Outbreak of Bovine Hyperkeratosis. Am. J. Vet. Res., 11, (Oct., 1950): 355-365.*]

Brucellosis in Swine

When 30 pigs were divided into three experimental groups of 10 pigs each and 5 were treated while 5 were left as untreated controls, it was learned that bacteriemia persisted for varying periods up to three weeks. After the circulating blood was apparently freed of Brucella organisms, there still remained foci of Brucella throughout the body. This was determined by isolating cultures from lymph glands in various organs. Weight losses occurred, or weight was barely maintained, in the treated groups, while the control groups gained normally. Thus, the treatment of brucellosis-infected swine with streptomycin and sulfadiazine increased the life span but reduced the rate of gain.—[*L. M. Hutchings, Doris E. Bunnell, and W. W. Bay: Experimental Therapy of Brucellosis in Swine with Streptomycin and Sulfadiazine. Am. J. Vet. Res., 11, (Oct., 1950): 388-392.*]

Streptococcus Infection in Pigs

In pigs, there are many cases of the diplostreptococci-septicemia. The pathologic-anatomic changes seem to be the result of an allergy.

The histopathologic appearance varies with the change of the virulence of the microörganism and the degree of the sensitization of the affected individual.

Tibatin and eleudron are recommended for the treatment.—[*K. Holz: Importance of the Streptococcus Infection in Pigs. Deutsche Tierarztl. Wchnschr. (1950): 165.*]—F. KRAL.

Gastric Cancer in a Horse

A case of cancer of the stomach is described in a notable stallion, "Cacique," of pure Arab bloodlines—a sire at the Cuban Army Remount Station.

Apparently in good health, the horse suddenly developed colic symptoms in the morning and died in the afternoon despite strenuous efforts at medication indicated in this condition.

The autopsy findings recorded were: The small intestine was completely filled with blood that did not coagulate. A tumor about the size of a fist was found on the wall of the stomach. In its central part, the tumor was filled with a caseous matter of a cauliflower shape. Erosion of an artery was revealed and this was the origin of the internal hemorrhage.

Histopathologic examinations revealed the malignant nature of the tumor.

A large tumor in the stomach of a horse disturbs its functions, as it alters the mucosa and impedes gastric movements. This disturbance gives rise to symptoms that are usually considered in the general light of "colics," especially after the ingestion of food. In the dog, vomiting may be a predominant symptom that is absent in the horse for anatomic reasons. Physical decadence may be observed in advanced cases. Cases of internal hemorrhage as in the one cited are possible.

In general, the clinical diagnosis of cancer of the stomach in large animals is practically an impossibility at present, as is its treatment. In the dog, especially in early cases, surgical intervention has met with some measure of success but, in the large animals, diagnosis seems possible only on portmortem examination.—[*J. A. Castanedo: Notations on Cancer of the Stomach in Horses. Bol. El Digne (Cuba) 5, (Jan., 1950):30-33.*]—O. A. LOPEZ-PACHECO.

Actinomycosis in a Dog

The authors describe a case of actinomycosis of the mandible in a dog presented at the clinic of the School of Veterinary Medicine of Sao Paulo, Brazil. The condition, affecting the bone of the jaw proper, is relatively rare.

A male Pointer, 15 months old, had a tumor-like swelling on the right side of the mandible for about two months before it was presented to the clinic.

The dog was emaciated and in poor general condition. The skin was dry and inelastic. Retropharyngeal, parotid, and submaxillary lymph glands of the right side were enlarged and sensitive. The mucosae were discolored, the tempera-

ture was 39.3 C. (102.9 F.), pulse 100 and regular. There was light exophthalmia and conjunctival edema of the affected side. Mastication was difficult because of lack of mobility of the mandible.

A radiograph revealed structural modifications and proliferation of osseous tissue on the right ramus of the mandible, from the last premolar to the second molar, extending to the temporomandibular articulation.

A hemogram revealed light leucocytosis and monocytosis.

A positive diagnosis was made upon microscopic examination of the discharge and a biopsy of the masseter muscle and submaxillary gland. No cultures were made to identify the species of Actinomyces.

The classical treatment of potassium iodide (10 cc. of 10% solution daily) intravenously was supplemented with 100,000 units of penicillin, glucose and liver extract parenterally, and ammoniated iron citrate orally.

Upon necropsy and histopathologic examination, colonies of Actinomyces were found.

The interest in this case lies in the rarity of the disease in dogs, especially its localization in the osseous tissues.—[*M. F. Migliano and A. V. Stopiglia: Actinomyces of the Mandible in a Dog. Rev. Fac. Med. Vet. Sao Paulo, Brazil, 4, (Dec., 1949): 161-165.*]—O. A. LOPEZ-PACHECO.

Reticulocytes in Anaplasmosis and Piroplasmosis

A study of reticulocytes found in the blood of 4 cows of Dutch origin afflicted with anaplasmosis and piroplasmosis is reported.

The animals were submitted to artificial premunition with blood containing Anaplasma and Piroplasma. No reticulocytes were found in their blood previous to this procedure. Forty-one days after inoculation, 2.5 reticulocytes per 100 erythrocytes were detected. On the forty-ninth day after inoculation, a peak of 7 reticulocytes per 100 erythrocytes was reached. Other young forms of red blood cells were also present.

Reticulocytemia was markedly positive in anaplasmosis but was not detected in piroplasmosis. Indication of close relationship between reticulocytemia and the degree of hemolysis in both conditions was noticed.

No parasites were detected in the blood until the twenty-first day after inoculation—a few Piroplasma bodies. Anaplasma organisms were found on the thirty-fifth day after inoculation in a proportion of 4.4 per cent, reaching a maximum of 18 per cent on the forty-first day whence decrease started until on the sixty-third day, they were very rare.

The average corpuscular volume was 37.2 per cent and the amount of hemoglobin was 11.4 gr./100 cc. A progressive decrease was noticed after the twenty-first day; the lowest values occurred on the forty-fifth day—corpuscular volume 16 per cent and hemoglobin 3.4 gr. After this time, it rose gradually until it reached normal on the 134th day.

Indications of negative correlation between degree of infection, corpuscular volume, and hemoglobin contents was observed. The author suggests that corpuscular volume should be considered in relation to r.b.c. count in routine work of premunition.—[*A. V. Machado: Preliminary Study Over the Occurrence of Reticulocytes in Anaplasmosis and Piroplasmosis. Rev. Fac. Med. Vet. S. Paulo, (Brazil) 4, (Dec., 1949): 185-196.*]—O. A. LOPEZ-PACHECO.

Leptospirosis in Israel

Ten years ago, leptospirosis was described as a new disease in cattle in Israel under the name of contagious jaundice. Five years later, the causative organism *Leptospira bubis* was described and since that time canine leptospirosis and its transfer to human beings in one instance has been reported. During the summer of 1949, leptospirosis was also discovered in cattle in one community. This was soon followed by a report of infection in human beings from the same region, but no connection between the people and the cattle was established.

Meantime, the disease spread rapidly among human beings and, to date, there have been 150 human cases reported, of which 3 have died.

The important question raised by the editor is "Who transmits the disease to the human being?"

An accompanying table, which shows the incidence in various species by months, was taken to indicate that animals do not play an important part in the spread of this contagious disease to human beings. There is, however, no logical explanation as to the spread from man to man.

Three types of Leptospira have been isolated: *Leptospira grippi typhosa,* from the field mouse; *Leptospira bubis,* in cattle and sheep; and *Leptospira canicola,* found in dogs.—[*Leptospirosis in Israel, editorial comment from Ref. Vet., (Sept., 1949.*]—M. ERDHEIM.

Eradication of Mange

The author tested jacutin (Merck) against sarcoptic, psoroptic, and chorioptic mange on horses and cattle with satisfactory results. The preparation was applied topically in the form of 2.5 per cent lotion or as powder.

In his opinion, the difficulties in the treatment of the demodectic mange are mainly caused by internal disorders of the affected animals—the etiologic importance of the demodectic mites has been overestimated.

Therefore, internal treatment and support of the skin resistance plays a most important part in the successful treatment of demodectic mange.

The author achieved good treatment results with subcutaneous injections of hexachlorocyclohexan (3% solution) in doses between 20 and 80 mg. per kilogram of body weight, depending on the

general condition, age of the patient, and degree of the skin lesions.—[*A. Borchert: New Eradication Methods of Mange. Monats. f. Vet. Med., (1950): 127.*]—F. KRAL.

Basis for Handling Animal Parasitisms

The third edition of Oelkers' textbook dealing with the basic treatment of worm diseases appeared in May, 1950.

The first part of this textbook discusses the trematodes, cestodes, and nematodes. In the second part, the antiparasitic preparations are described generally. The third part is devoted to the pharmacology of the anthelmintics, divided in the following chapters: alipothic compounds; aromatic compounds; etheric oils; dye preparations; alkaloids and alkaloid-containing drugs; other anthelmintics; metalloids and metals; and other pharmacologic preparations. The last chapter describes various worm cures.

In comparison to the second edition, all chapters have been revised and supplied with new anthelmintics and treatment experiments.

The treatment of animals infected with internal parasites has been essentially accomplished.—[*Pharmakologische Grundlagen der Behandlung von Wurmkrankheiten. III. Auflage. By Oelkers. Leipzig. Hirzel Verlag, 1950.*]—F. KRAL.

Duties of a Russian Veterinarian

The Soviet Ministry of Agriculture has recently published a new regulation on the rights and duties of a chief district veterinarian. He is a government inspector charged with supervision of the fulfillment by the collective farms of the plan for development of the livestock industry. He must also see that the rules for the management and breeding of domestic animals are observed on all the farms of the district. He organizes the veterinary activities of the district.

The chief district veterinarian is usually a graduate of a veterinary college. If none is available, a technician with a secondary school veterinary education may be substituted. The chief veterinarian is directly responsible to the district chief of the agricultural administration. He is appointed or discharged by the agricultural administration of the province or republic.

His duties include the organization of veterinary service for the socialized animal industry of the collective farms that do not have their own veterinary service, and also for the privately owned animals of the farm workers. He must plan disease control measures and see that they are carried out on all farms of the district. He is responsible for the enforcement of all veterinary-sanitary regulations, and for the prevention of diseases transmissible from animals to man. He must organize sanitary supervision for all places where meat and animal products are manufactured or stored, where animals are slaughtered, and where animals, meat, or animal products are marketed. He is also responsible for animals trailed or transported, and for the transport of animal products. He provides control over the culling of animals on the collective farms to see that this is done according to regulations.

The chief district veterinarian directs and inspects the work of the veterinary establishments of the Ministry of Agriculture and supervises the veterinary service on farms belonging to other jurisdictions in the territory. He recruits candidates for appointment to positions in the veterinary service of the district and presents them for approval to the district chief of the agricultural administration. He devises measures for the improvement of the qualifications of the veterinary workers, and carries on veterinary-sanitary extension work among the population.

He must take part in the planning of buildings for the veterinary establishments of the Ministry of Agriculture, and must be available for consultation on construction of animal shelters on the farms. Together with the head zoötechnician of the region, he must prepare estimates of expenditures for the maintenance of the veterinary establishments. He also controls the expenditure of funds for veterinary activities.

He is required to keep a journal on epizoötics and to report at suitable intervals (on the prescribed forms) to higher veterinary authority.

He has the right to inspect livestock and poultry farms and their buildings, plants for the processing and storage of meat and other animal products, and the market places for poultry, meat, and industrial raw materials of animal origin. He may give advice on veterinary sanitation to managers of farms of all jurisdictions except the military.

The chief district veterinarian may prevent the movement to and from farms of animals that have not been certified free from disease by a veterinarian. He may also prohibit the working of sick, exhausted, or pregnant animals.

He has the authority to organize and direct all necessary measures to localize and eradicate infectious diseases until a quarantine is declared by the proper administration. He also has the authority to fix the responsibility for violations of the veterinary regulations of the U.S.S.R., and to assess fines up to 200 rubles with the approval of the district chief of the agricultural administration.

The directives of the chief district veterinarian, based on the veterinary regulations of the U.S.S.R. and instructions of the Ministry of Agriculture, and pertaining to the care, housing, feeding, and exploitation of animals, and the prevention and treatment of disease, are obligatory for all farms, plants, and individual citizens. Such directives may be revoked only by decision of the Executive Committee of the District Soviet of Workers' Representatives, or by higher veterinary authority.—[*No author given: Rights and Duties of a Chief District Veterinarian. Veterinariya, 27, (March, 1950): 61-62.*]—R.E.H.

Chlorinated Turpentine Treatment for Ticks

The Russian product, SK-9, is described as chlorinated turpentine with an emulsifying agent. It was tested on 3,500 cattle in the Stavropol region and found effective against Boöphilus, Hyalomma, Haemaphysalis, Rhipicephalus, Dermacentor, and Ixodes. The ticks were paralyzed in six to twelve hours and dead within twenty-four hours. A 1 per cent emulsion was used for dipping, and a 3 per cent emulsion for brushing on the animals. Treatment was effective for fifteen days in spring and fall, and for ten days in summer. The product was not toxic at the recommended concentrations.—[*S. F. Vyazkova: The Efficacy of SK-9 in Experiments on the Control of Hemosporidioses. Veterinariya, 27, (March, 1950): 14-17.*]—R.E.H.

Possibility of Antivitamin Effects in Metallic Poisoning

An important aspect of poisoning from therapy with toxic metals is the possible development of lesions often associated with certain vitamin deficiences. The author describes such deficiences in several human patients. In one of these, symptoms of vitamin K deficiency, namely, prolonged clotting time of the blood, epistaxis, and rectal hemorrhage, occurred during treatment with gold for rheumatoid arthritis. The symptoms disappeared when the gold treatment was discontinued.

Skin lesions suggestive of riboflavin deficiency appeared in a patient who had been given a treatment with gold eleven years previously. Prolonged treatment with riboflavin or liver extract was only partially successful in correcting the lesions. The lesions promptly healed when riboflavin treatment was supplemented with a sulfur-containing compound. This treatment was followed by increased excretion of gold in the urine.

The author states that poisoning with either arsenic or gold may lead to "definite epithelial patterns of deficiency." These changes have been designated as a "biochemical lesion" in metallic poisoning and are difficult to distinguish from lesions that characterize certain vitamin deficiencies.

The summary contains the following statement. "In the case of 'pellagra sine pellagra' and other epithelial patterns of deficiency not associated with obvious malnutrition, it is worth while keeping in mind the possibility of metallic poisoning." —[*William Hughes: Deficiency Patterns in Metallic Poisoning. Brit. M. J., (March 18, 1950): 634-639.*]—J. SAMPSON.

Acetonemia

The special physiology of the rumen accounts in part for the frequent occurrence of ketosis of ruminants. The sensitivity of ruminants to causes which increase the production of ketone bodies can be explained by the rich microbian flora of the rumen from which particular metabolic processes originate. In contrast with carnivores, a large portion of alimentary glucids is transformed into volatile fatty acids of low molecular weight by bacterial fermentation in the rumen, and at least one sixth of the energy needed is provided by the combustion of such acids. Cellulose, which has no nutritive value in carnivores, is a source of energy in the ruminant owing to its transformation into acetic, propionate, butyric, and traces of other acids by bacterial action on its otherwise indigestible structure. Most of these acids are absorbed by the circulation of the first two compartments and passed to the liver to undergo various changes, e.g. glucose and glycogen, fats, amino acids, uric acid, and other metabolites. But, the greater portion is transformed into ketone bodies and passed into the general circulation; and because so large a proportion of alimentary glucids are transformed into fat, only a small amount is left for transformation into sugars. On that account, hyperglycemia of the adult ruminant is closely related to hypoglycemia of the carnivore. In this respect, the adult carnivore and the bovine calf prior to the start of rumination are analagous. As a consequence, as the body needs increase, hypoglycemia occurs more easily in ruminants than in carnivores. —[*G. Lesbouyries and A. Charton: Acetose des Ruminants. Rec. Med. Vet., 126, (Feb. 1950): 65-91.*] (This abstract covers only the introduction of the article.)—L. A. M.

BOOKS AND REPORTS

Laboratory Examinations in Clinical Diagnosis

Based on the statement that diagnosis, prognosis, and treatment are derived from data that must be collected and analyzed, the book presents information by 33 contributors and this information has been evaluated by 66 critics. Although the work is directed primarily at the physician, a good deal of it applies equally to a practitioner of veterinary medicine. For example, the continuous and humble search for the truth makes investigators of each throughout their period of life and active work. Both must distinguish between fact and theory, and both must use the scientific method of thought which frequently is equivalent to the use of good judgment or of common sense.

The data used by practitioners of medicine and veterinary medicine may be obtained from the history of the patient, the physical examination, or the use of laboratory examinations. The book here reviewed is a presentation of those laboratory examinations which may be used and an evaluation of their significance in clinical diagnosis.

After an introductory chapter on laboratory examinations in general, there is specific discussion of examinations of the blood, the urinary system, the gastrointestinal tract, tests for infectious diseases, for diseases of metabolism, and special tests

for extravascular fluids. Many of these may be applied to veterinary medicine equally as well as to human medicine.

The book is in greater detail than some of the other handbooks of this nature which have been reviewed recently and for that reason may be a little more difficult for the veterinarian to use. On the other hand, the extra information may at times prove valuable in addition to such tabular and abbreviated facts as are listed in handbooks.—[*A Syllabus of Laboratory Examinations in Clinical Diagnosis. Edited by T. H. Ham. 496 pages. 8½ in. by 11 in. Paper. Lithoprinted. Numerous charts and tables. The Harvard University Press, Cambridge, Mass. 1950. Price $5.00.*]

Animal Facts and Fallacies

The book is filled with information on animals, some of it fact, some fancy, and some outright fiction. In each case, the reader is straightened out as to the truth of the statements being made.

Almost any of the wild statements regarding animals of all kinds can be checked because the index is arranged in such a way that the information presented can be found readily.

Because the veterinarian is frequently asked questions of all types about animals of all species, the book should be a part of the library of every practicing veterinarian.—[*Animal Facts and Fallacies. By Osmond P. Breland. Cloth. 268 pages. Illustrated. Harper & Brothers, New York City. 1950. Price $3.00.*]

Veterinary Guide for Farmers

This book in its foreword says, "Though broadly informative, the book is, of course, not designed to replace the services of trained veterinarians." It is manifestly a review of information which has previously been published in Bureau of Animal Industry books, farmers' bulletins, and experiment station releases of various kinds. The author does not presume to use his own judgment in recommending procedures for surgery or treatment but relies heavily on previous recommendations and in many instances these are quoted verbatim.

For the most part, the author restricts his comments to the basic considerations in animal disease prevention and control, and with a minimum of actual treatment. Veterinarians will take exception to a few statements such as, "medicinal treatment of blackleg is of no value," "medicinal treatment for white scours or infectious diarrhea is useless."

In general, the book is well written for those to whom it is dedicated, namely, the GI's engaged in on-the-farm training under the auspices of the Veteran's Farm Training Program of the United States Veteran's Administration and vocational education leaders of the various states. It does not attempt to replace the services of trained veterinarians. It is carefully edited by the author as well as by Mr. Dallas S. Burch who was formerly with the Bureau of Animal Industry, USDA. It presents the basic information which livestock owners can use in arriving at a decision regarding the advisability of calling a veterinarian, and it leaves many places where the veterinarian is strongly recommended early in the course of the condition.—[*Veterinary Guide For Farmers. By G. W. Stamm. Cloth. 288 pages. Illustrated. Windsor Press, Chicago and New York. 1950. Price $3.50.*]

Animal Nutrition

The book discusses the feeds of animals from the relationship of energy availability. It is divided, in the conventional manner, into a discussion of fats, carbohydrates, and proteins, along with the protective feeds such as minerals, vitamins, water, and again protein because it has a double value.

A collection of the chemical and technochemical reports which underlie the biochemic reactions in animal nutrition, its use in the United States is limited because it is written completely in German, with no English summary.—[*Die biochemischen Grundlagen der Tierernahrungslehre (The Biochemical Basis of Animal Nutrition). By Karl Scharrer. Paper. 162 pages. Ferdinand Enke, Stuttgart, Germany. 1950. Price 1.80 German marks.*]

Laboratory Animals

The book consists of 16 chapters, each prepared by a specialist in a particular field and each chapter discusses the numerous inquiries which always arise in connection with the breeding and caring for animals used in research. The chapters cover not only the usual experimental animals such as the white rat, guinea pig, hamster, and others, but there are specialized chapters on reptiles, fishes, and even drosophila.

The book contains a vast amount of information which will be useful to any veterinarian associated with the hospitals and experiment stations which maintain colonies of experimental animals. Each subject is discussed from the standpoint of normal management, proper feeding, prevention of disease, and, to a limited extent, treatment of disease. The emphasis throughout the book is on preventive medicine through sanitary management and complete feeding. The last chapter is devoted to the control of laboratory pests and parasites of laboratory animals.

A worth-while book for any veterinarian who is called upon to treat or advise regarding the care of experimental animals.—[*The Care and Breeding of Laboratory Animals. Edited by E. J. Farris. Chapters by 15 experts. Cloth. 515 pages. Illustrated. John Wiley & Sons, Inc., 440 Fourth Avenue, New York 16, N. Y. 1950. Price $8.00.*]

Equine Infectious Anemia

This two-volume edition can be judged only incompletely because it is entirely in Japanese except for the titles of the chapters and the references cited. However, a quick review of these titles and references indicates that the authors made a painstaking survey of the whole problem of equine infectious anemia and if the text furnishes the abstracts or the condensed ideas of the several authors listed, it shoud be a very complete work on this subject.—[*Equine Infectious Anemia. A collection of papers by some 15 authors. Vol. I, 264 pages; vol. II, 172 pages. 7½ by 10½ in. Cloth. Animal Hygiene Section, Bureau of Animal Industry, Ministry of Agriculture and Forestry, Japanese Government. Kasumigaseki, Chiyoda-ku. 1949. Price not given.*]

Survival Under Atomic Attack

A concise summary of the thousand and one questions which are asked frequently concerning the atomic bombing of any community. The book begins with this statement, "You can survive," and then it tells of the steps which may be taken in order to insure such survival.—[*Survival Under Atomic Attack. Paper. 32 pages. U. S. Government Printing Office, Superintendent of Documents, Washington 25, D.C. 1950. Price 10 cents.*]

Defense Against Atomic Attack

Defense against atomic bombing requires quick action—more so than defense against the old fashioned T.N.T. and fire bombs. However, it is not hopeless. Although an atomic bomb strike will mean disaster and destruction, as well as death, it is possible to reduce each of these and to prevent many of the deaths.

In order to increase the chance for human survival, the authors have outlined a manual for survival which should guide one's thinking and planning in the right direction.—[*Atomic Attack—A Manual for Survival. By J. L. Balderston, and G. W. Hewes. Paper. 55 pages. Culver Products Co., 3631 Eastham Drive, Culver City, Calif. 1950. Price $1.00.*]

The Farm Dog

In recent years, farmers have a great deal of interest in getting the right dogs for their farm and training them properly. In response to this interest, the book was prepared. It is divided into chapters on basic training, ten don'ts for the farm dog, and training the herding dog. There is a chapter on selecting the right dog for the farm, with a listing of the pictures and characteristics of many of the common breeds which are suitable for farm work.

This is a modification of the accepted standards for dog training and is limited to those types of training which farm dogs are expected to use regularly. The presentation is interesting, concise, and reliable. Diseases are mentioned only in so far as protection against distemper and rabies is advocated. In this connection, the books says, "Veterinarians secure their supplies of vaccines and serums from reliable firms, store them at the right temperature, and keep them fresh and effective for use. They can also determine accurately whether your dog is in proper physical condition to take the treatment."

A very convenient book which the general practitioner may recommend to his clients, or which he may read and then make suggestions to his clients for the proper training of the farm dog.—[*Purina Farm Dog Book. Paper. 63 pages, 5½ in. by 8½ in. Ralston Purina Company, St. Louis 2, Mo. 1950.*]

Inheritance in Dogs

The book deals essentially with the external characters of dogs with particular emphasis on coat and color. It reviews a number of scientific contributions and tries to interpret them in rather simple language so that many people may have a better insight into inheritance in dogs.

Beginning with a simple review of the chromosomes and the method in which they determine body characters, the book discusses inbreeding, formation of new breeds, the standardizations of characters, and similar items. It then proceeds, in Part Two, with a discussion of inheritance in specific breeds and explains the wide variation which occurs within the breed.

The book was written by the noted geneticist and professor at the Carlsberg Laboratory in Copenhagen, and is translated by Dr. Catherine Roberts of the University of California at Berkeley.—[*Inheritance in Dogs. By Ojvind Winge. Cloth. 153 pages. Illustrated, some color plates. Comstock Publishing Company, Inc., 124 Roberts Place, Ithaca, N. Y. 1950. Price $3.50.*]

Food and Nutrition Research

This is a continuation of the first edition and it includes those research projects previously reported which continued active, and also the new projects which have been activated between March, 1948, and March, 1950. The material is listed under four main headings: physiology, chemistry, technology, and microbiology. A total of 659 organizations reported research and these reports are cross-indexed under personnel participating (37 pages) and a subject index (84 pages).

Although the work is largely in the field of human nutrition, much of it was carried on in animals and is basic to the nutrition of animals. The book should therefore be interesting and valuable to those veterinarians interested in maintaining an up-to-date knowledge of the progress of animal nutrition.—[*Survey of Food and Nutrition*

Research in the United States 1948-1949. By the Committee on Survey of Food and Nutrition Research of the Food and Nutrition Board. Paper. 311 pages, 8½ in. by 11 in. Food and Nutrition Board, National Research Council. June, 1950. Price $1.75.]

Gallery of American Dogs

Within the covers of this book is a complete gallery of American dogs, some 120 breeds and types being presented. These are arranged under the following classifications: hounds, terriers, the gun dog family, working breeds, companion dogs, and other popular American dogs.

After a brief preface by Mr. Harry Miller, a short statement by the photographers who took the pictures, and an introduction by Mr. R. Kilbon, president of the Dog Writers' Association, the book launches into a presentation of every known type of dog. This is done by describing briefly on the left hand page the origin and characteristics of the dog—with a small pen and ink sketch of the complete dog, and then a full page photograph showing the head and facial characteristics of a typical animal, usually a champion within the breed.

This book, the equal of which is not available elsewhere, is a "must" for the reading table of every veterinary hospital.—[*Gallery of American Dogs. By Harry Miller, Arthur S. Mawhinney, Katherine Holt Mawhinney, and Paul Brown. Cloth. 262 pages, primarily illustrations. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18, N. Y., 1950. Price $7.50.*]

Trimming Chart

A chart which illustrates the correct method of plucking and trimming terriers has been prepared by Mr. Will Judy, editor of *Dog World* magazine. With a brief explanation of the reason for trimming and the terms used, there is a diagram of the dog showing the various portions of the anatomy and the terms applied to them, and some of the common tools used in grooming, plucking, and trimming, together with an outline of several types of terriers and a step-by-step set of instructions for plucking so that the exhibitor will have a uniform group of dogs for a show.—[*All Terriers Trimming Chart. By Will Judy. 17 in. by 24 in. Judy Publishing Company, 3323 Michigan Boulevard, Chicago. 1950. Price $1.00.*]

Cats and Kittens

This book is probably the finest collection of cat and kitten pictures ever gathered together in one volume. These pictures include drawings, paintings, and sculpture by the masters, and show cats in all phases of their daily life and activity. All types of cats are included from the domestic cat without a home to the pampered Persian and Angora.

This group of 120 pictures is preceded by two short chapters explaining the nature of the work and an introduction to the history of the cat, both legendary and real.

It is a book which should grace the table in the waiting room of every small animal hospital.—[*Cats and Kittens. Edited by Bryan Holme. Cloth. 98 pages, mostly illustrations. Thomas Y. Crowell Company, 432 Fourth Avenue, New York, N. Y. 1950. Price $3.00.*]

Dissection of the Cat

Because the internal anatomy differs but little from the human anatomy, except those parts modified to be in harmony with the erect posture and enlarged brain, this animal provides a favorable material for an introductory study of mammalian anatomy, especially as a preliminary to the study of medicine.

The introduction of the book describes the method of preserving the body and of making injections of the vascular system so that the arteries and veins may be studied along with nerves, muscles, and bones. The book then continues with an itemized account of the skelton and the articulations, the external features, the muscles, and the abdominal viscera. Throughout the book there is a detailed, step-by-step outline to guide the student in making dissections and in identifying the various tissues as they are met in the dissection of the carcass.—[*Directions for the Dissection of the Cat. By R. P. Bigelow. Cloth. 65 pages, 5 in. by 6½ in. Illustrated. The MacMillan Co., 65th Ave., New York 11, N. Y. 1950. Price $1.75.*]

The Physician Examines the Bible

Here is an examination of the Bible from the medical standpoint—etiology, diagnosis, and prognosis. Written by a physician who has been deeply interested, this volume proves again that one can find references to almost any subject under the sun in the Bible. Moreover, it proves that far from being ancient history and quite out-of-date, the Bible is as modern as any book published today.

The nine chapters list references by the Old Testament and the New Testament as well as under headings for each of the several analyses made.

In addition to the usual complete index, it has 30 pages of medical concordance.

Veterinarians interested in the Bible will find in this text many interesting and instructive facts which show the relation of the Bible to science and medicine — not in general terms, but in detail.—[*The Physician Examines the Bible. By C. R. Smith. Cloth. 394 pages. Philosophical Library, Inc., 15 East 40th Street, New York, N.Y. 1950. Price $4.25.*]

Medical Entomology

This book was originally published as "Medical and Veterinary Entomology" in 1915.

The opening chapters of this text deal with the scope and method of the subject, parasites and parasitism, the manner in which arthropods cause and carry disease, the classification of insects and arachnids, and the mouth parts of these species. Beginning with chapter VII, the author takes up specific parasites and the diseases which they may be instrumental in spreading.

With the introduction of DDT and other insecticides, the approach to insect control has been greatly changed and this has necessitated complete revision and much enlargement of many of the chapters as compared with the preceding edition.

The student of entomology will find this a valuable and complete text for classroom and reference work. However, the practitioner will find that much of the material is not pertinent and too detailed. He will therefore resort to more abridged versions for every day use.—[*Medical Entomology. By W. B. Herms. 4th ed. Cloth. 643 pages. Well illustrated. The MacMillan Company, 60 Fifth Ave., New York 11, N. Y., 1950. Price $9.00.*]

Physiotherapy in Veterinary Medicine

In the foreword, the author calls attention to the fact that physical methods of therapy have been known and used for a long time, but there has been no systematic tabulation of these items. This is the need which the book tries to fill.

In so doing, the author discusses the physiology and application of heat, cold, hydrotherapy, moist bandage and packing, irradiation with light, heat, and radium. In order to arrange this material systematically, it is discussed under diseases of the external parts of the body and the internal organs, especially those of circulation, respiration, digestion, kidneys, and reproduction.

Discussed in this manner, the book makes a very creditable presentation of the ways in which physiotherapy may be applied to best advantage in animal ailments.—[*Physikalische Tiermedizin (Physiotherapy in Animal Medicine). By Otto Eggert. Cloth. 187 pages. Illustrated. Ferdinand Enke, Stuttgart, Germany. 1950. Price 26.80 German marks.*]

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The 1948-49 Outbreak of Fowl Cholera in Birds in the San Francisco Bay Area and Surrounding Counties. M. N. Rosen and A. I. Bischoff. Reprint from "California Fish and Game," 35, (July, 1949): 185-192.

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Furacin Solution Veterinary—Bovine Mastitis. New Release. Goshen Laboratories, Inc., Goshen, N. Y., 1 p.

Dermatology, An Elementary Reference for Physicians. H. M. Hedge, M.D. Circular No. 175, Department of Public Health, Springfield, Ill. 80 pp.

Rye Grass and Crimson Clover for Winter Pasture. Bulletin 380. South Carolina Agricultural Experiment Station, Clemson, S. Car. 30 pp.

Thirty-Second Annual Report. Illinois Department of Agriculture, Springfield. 247 pp.

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U. S. Veterinary Licenses in Effect May 1, 1950, and Other Information Regarding Licenses and Biologics. Division of Virus-Serum Control, Bureau of Animal Industry, U. S. Department of Agriculture, Washington, D. C. 18 pp.

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THE NEWS

Milwaukee Prepares for 1951 AVMA Convention August 20-23

The genial and famous city of Milwaukee, Wis., is getting ready to entertain the 1951 AVMA convention, August 20-23. Keeping watch over every phase of the convention planning is Dr. Kenneth G. Nicholson of Milwaukee, chairman of the Committee on Local Arrangements.

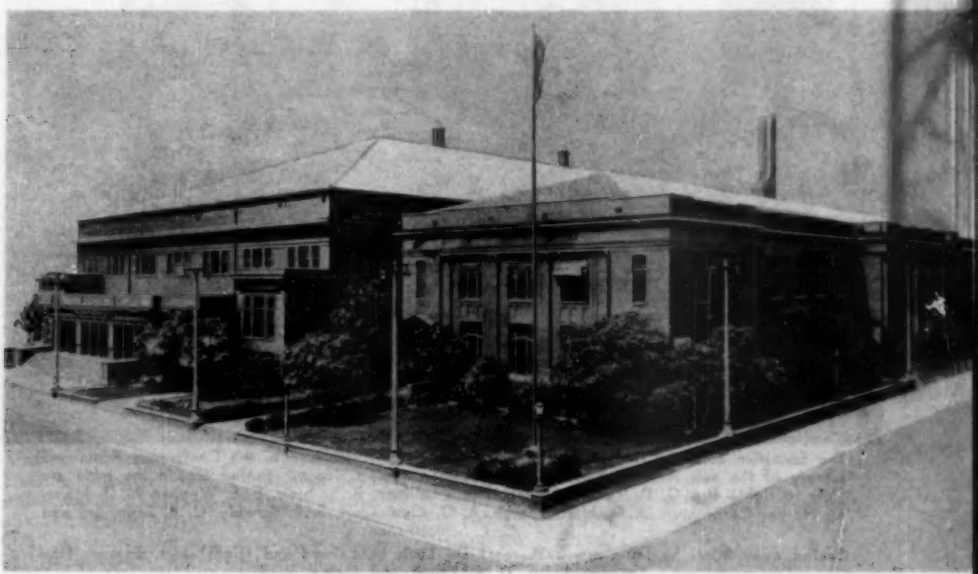
Enthusiastic Wisconsin veterinarians who will coöperate with Dr. Nicholson in organizing this event confidently predict a registration of 2,500, and all plans are being made with this record-breaking figure in mind.

Executive Secretary Hardenbergh and Assistant Executive Secretary Van Houweling met with Dr. Nicholson in Milwaukee on November 22 and inspected meeting rooms for the scientific sessions. All agreed that the city is well prepared to furnish the required accommodations. In fact, never before has the AVMA been offered such excellent facilities for an annual meeting.

The spacious Milwaukee Auditorium, which will be headquarters for all sessions and exhibits, is sure to be a top-ranking favorite with commercial exhibitors, because it has a large, centrally located exhibit hall that will invite repeated visits from all registrants.

This year, for the first time at any AVMA convention, educational exhibitors will have an entirely separate exhibit hall, adjoining the commercial exhibits. The educational exhibits at the 1950 Miami Beach meeting were so well presented and attracted so much interest that it has been decided to continue this feature on an even broader scale. Accordingly, space for such exhibits at Milwaukee will be nearly double that of last year.

Hotel accommodations will be adequate and convenient to the Auditorium. Hotels chosen to house the convention will be announced in the JOURNAL next month.



The Milwaukee Auditorium where the Eighty-Eighth Annual Meeting of the AVMA will be held Aug. 20-23, 1951.

President Coffee Recovering from Eye Operation

President W. M. Coffee is reported to be making "excellent progress" following an operation for detached retina of the right eye. It was necessary to immobilize his head between sandbags for a considerable time after the operation, which was performed at McMillen Hospital in St. Louis, Mo., Nov. 17, 1950. Dr. Coffee telephoned the AVMA office recently to say that he hopes to resume his travels to state association meetings in January.

Executive Board Holds Winter Meeting

The regular semiannual meeting of the Executive Board was held in the conference room and library at AVMA headquarters in Chicago on Nov. 28-29, 1950. All members of the Board were present (*see* picture) except President Coffee and Dr. A. L. MacNabb of District I (Canada).

Among the matters of business considered and actions taken by the Executive Board were the following:

1) Approved meeting schedule for the 1951 convention in Milwaukee to be held August 20-23.

2) Set the dates of June 23-26 for the 1952 convention in Atlantic City. The hotel headquarters will be the Ambassador, with the Ritz-Carlton and Chelsea, on either side of the Ambassador, as auxiliary hotels.

3) Heard reports of Board committees on amendments relating to membership.

4) Approved a plan for electing the first Executive Committee of the House of Representatives by mail.

5) Considered revisions of the "Essentials of an Acceptable Veterinary School" proposed by the Council on Education.

6) Approved an adjustment of the current publicity and public relations program so that more of the details of this activity will be handled by the central office.

7) Considered a resolution from the Association of Deans of American Colleges of Veterinary Medicine asking AVMA support for inclusion of veterinary medicine in federal aid to medical education if and when these bills are considered by the next session of the Congress.

8) Deferred action and formal recognition of the American College of Veterinary Pathologists and the American Board of Veterinary Public Health until recommendations are received from the Council on Education and the veterinary dean's association as to how such specialty boards should be approved by the association.

9) Authorized participation in the scientific exhibits at the American Osteopathic Association convention.

The Executive Board at its Winter Meeting, Nov. 28-29, 1950, held in the Conference Room and Library of the new AVMA offices, 600 S. Michigan Ave., Chicago. Seated around the table are (left to right) Drs. C. D. Van Houweling, Edwin Laitinen, R. S. Sugg, E. E. Wegner, N. J. Miller, O. Norling-Christensen, J. G. Hardenbergh, R. C. Klussendorf, S. F. Scheidy, C. P. Zepp, Sr., and C. F. Schlotthauer.

Seated away from the table are (left, rear) Dr. Louis H. LaFond and (right) Mrs. Emmons (the reporter), Drs. W. A. Young, and John R. Wells.

Drs. W. M. Coffee and A. L. MacNabb were absent from the meeting.

Information on Public Law 779

Following a meeting of the National Advisory Committee to Selective Service on the selection of physicians, dentists, veterinarians, and allied specialists in Washington this week, Dr. Howard A. Rusk, chairman, reassured hospitals and professional teaching institutions that the current classification of essential hospital residents and interns, and research and teaching personnel as I-A and I-A-O does not necessarily mean such registrants will be inducted into the military services at once.

Stating that state and local advisory committees are now functioning in all of the states and territories, Dr. Rusk said that the national headquarters of the Selective Service System had requested local selective service boards to re-open and consider anew the case of any special registrant at any time prior to the issuance of an order for induction, if the state and local advisory committees submit evidence in the case and request a re-opening for the purpose of having such evidence considered.

Doctor Rusk emphasized that there are no blanket policies regarding interns, residents, and essential teaching and research personnel, but that each case was being considered by the local and state advisory committees on the basis of the individual registrant's essentiality to the maintenance of the national health, safety, or interest. "Although certain procedural problems are being referred to the National Advisory Committee," he said, "reports indicate that local selective service boards and state local advisory committees are working effectively together to insure the proper classification of those physicians, dentists, and veterinarians who are liable for service under Public Law 779."

In consideration of the essentiality of any registrant, Dr. Rusk pointed out that state and local advisory committees were giving particular attention to the nation's health, safety, and interest.

Some concern, Dr. Rusk said, has arisen because some local selective service boards classified many of them as "I-A" for the purpose of securing a pre-induction physical determination before the advisory committee had acted. Such decisions, he explained, were made locally on the basis that this seemed to be the most effective procedure, and state and local advisory committees in those states are rapidly becoming more active and are currently conferring with local selective service boards concerning recommendations for reclassification. Reclassification after the pre-induction physical examination is, of course, entirely possible on the basis of essentiality.

In all instances which have come to the National Advisory Committee's attention, he said, "local selective service boards are giving the most careful consideration to the recommendations of the state and local advisory committees."

Pointing out that all members of the local and state advisory committees are serving as volunteers, Dr. Rusk praised the medical, dental, veterinary, and other health professions and the Selective Service System for their "all-out coöperation."

IMMEDIATE CLASSIFICATION ON ESSENTIALITY DESIRABLE

Although the time factor in many instances prevented state and local advisory committees from making recommendations to local selective service boards regarding the essentiality of registrants in Priority I prior to the registrant's pre-induction physical examination, it is considered advisable that such recommendations be made at the earliest feasible time. The national headquarters of the Selective Service System has requested local boards to re-open and consider anew the case of any special registrant at any time prior to the issuance of an order to report for induction if the state or local advisory committees submit evidence in the case and request a re-opening for the purpose of having such evidence considered. (Selective Service System Operations Bulletin 10. *See* JOURNAL, Dec., 1950, p. 484.) The request made in this Bulletin and the actions recommended were to afford the state and local advisory committees time and opportunity to consider fully and make specific recommendations on all cases of special registrants.

In the case of registrants in Priority II, it is desirable that recommendations on essentiality be made by state and local advisory committees to local selective service system boards as soon as possible, preferably prior to the registrant's pre-induction physical examination.

QUESTIONS AND ANSWERS ON PUBLIC LAW 779

The following questions and answers represent the current views of the National Advisory Committee and are based on all of the facts available to the Committee at this time.

1) Are persons who were in the Medical Administrative Corps, but not in the Army Specialized Training Program, as undergraduate medical and dental students liable for registration and induction in Priorities I and II?
   No.
2) Is time on active military service *prior to* the completion of the training program included in computing the length of military service of registrants in Priorities I and II?
   No. Only active duty *subsequent to* the completion of training leading to a degree is counted.
3) Is terminal leave counted in computing the time on active duty?
   Prior to Aug. 31, 1946, terminal leave was

considered active duty, whether the officer continued to serve or was given a lump sum payment and discharge. Subsequent to the above date, if given lump sum payment and discharge, his active duty terminated therewith. If he continued to serve out his terminal leave, he was given credit for being on active duty for the period he served, unless it was for longer than sixty days, in which case his active duty included only the first sixty days of the terminal leave period.

4) If a man took his professional education under the G.I. Bill, in which priority is he placed?
He is placed in Priority IV.

ADMINISTRATION

1) How can the local advisory committees obtain lists of the registrants in the first two priorities?
These should be available on request of the local advisory committee to Selective Service from local selective service boards.

2) Will a copy of each registrant's record (form 390) be furnished to the local advisory committee to Selective Service?
No, for this is considered confidential information. However, discussions are now in progress at national level, asking that certain nonconfidential but pertinent information be released to the advisory committee.

3) Will the advisory committee to the Selective Service System have an opportunity to advise on the availability of registrants before induction?
Yes. Local boards have been requested by the director of the Selective Service System to re-open and consider anew the case of any such registrant at any time prior to the issuance of an order to report for induction, if the state or local advisory committees submit evidence in the case and request a re-opening for the purpose of having such evidence considered.

4) How is such evidence to be presented?
In writing, with adequate documentation.

5) How should hospitals, schools, and other institutions proceed to re-request deferment of special registrants?
Requests to "re-open and consider anew" (*see* answer to question 3) a case with the local board should be made wherever possible through the advisory committee to Selective Service. If a request is made direct to the local selective service board, a copy should be furnished to the advisory committee.

PROCEDURE

1) If a man applies for a commission after his notification of induction, will he be deferred until the commission is given?
Nothing in the law covers this. He should, however, make every effort to obtain coöperation of the local selective service board until he receives his commission.

2) If a man has applied for a commission, can his draft board order him for induction?
Yes. His advisory committee to Selective Service should, however, consult with the local Selective Service Board (*see* answer to question 1).

3) If a man has received and accepted a commission and taken his oath and is then ordered for induction, what happens?
His local board will reclassify him in I-D if he properly notifies them of his new status.

AVMA Membership Cards Will Be Delayed Due to New System

After you have remitted your 1951 dues, it may be several weeks before your 1951 membership card reaches you. A new system of issuing these cards requires processing in multiples of 1,000, or more, at intervals of several weeks. This system was adopted to meet the growing workload of the central office—so please bear with us if your card does not come as soon as expected.

Appreciates Honor Conferred

The following letter was received from Dr. R. R. Henley, Washington, D.C., in response to the action taken at Miami Beach last August by the House of Representatives making Dr. Henley an honorary member.

DEAR DR. HARDENBERGH:

For more than forty years it has been my privilege and pleasure to work for and with veterinarians and through them for their profession. From the start I recognized and appreciated the fundamental importance of the veterinary profession not only to the health of livestock but the health and well being of the people of the country. With the passing years, that appreciation has grown. It is therefore particularly gratifying to learn that such services as I have had the opportunity to render have merited the recognition of the members of the American Veterinary Medical Association.

Indeed, no other honor would be so warmly welcomed and so highly prized.

Sincerely,

s/R. R. HENLEY, PH.D.

"Feeding Forum" To Be Sent To AVMA Members

The Agricultural Service Division of the American Feed Manufacturers Association is sending copies of *Feeding Forum* to all members of the

AVMA beginning with the fall issue. The gracious offer from the A.F.M.A. to send this digest of basic nutritional data to AVMA members was accepted with thanks by the Executive Board of the Association at their annual meeting in Miami Beach last August. Not only is it believed that veterinarians will appreciate and find valuable the information published in *Feeding Forum*, but it also is evidence of the fine relationship that exists between the two associations. The AVMA office is addressing the envelopes in which the publication will be sent, all other expenses being borne by the A.F.M.A. Comments relative to the information in *Feeding Forum* may be sent to the AVMA central office or directly to Mr. Wm. Diamond, director of the Agricultural Service Division of the American Feed Manufacturers Association, 53 W. Jackson Blvd., Chicago 4, Ill.

French and Turkish Veterinarians Visit AVMA Office

A delegation of 13 French and 5 Turkish veterinary medical scientists spent two days in Chicago in November as guests of the AVMA, public health agencies, and food-processing companies. Their tour was arranged by the Economic Cooperation Administration as a phase of the U.S. technical assistance program.

AVMA headquarters presented a special program for the group on the morning of November 13. Welcoming addresses and brief talks on activities of the Association were given by Dr. J. G. Hardenbergh, executive secretary; Dr. O. Norling-Christensen, member of the Executive Board; Dr. R. C. Klussendorf, editor-in-chief; Dr. L. A. Merillat, editor emeritus; Dr. J. V. Lacroix, editor and publisher of *The North American Veterinarian;* and Mr. J. J. Shaffer, public relations department. Drs. Merillat and Lacroix both spoke in French—a gesture that was much appreciated by the French veterinarians. Dr. W. A. Young, managing director of the Anti-Cruelty Society of Chicago and treasurer of the AVMA, joined the group at luncheon.

Official spokesmen for the two countries—Dr. Jean-Pierre Thiery, of Alfort, France, director of the Central Laboratory of Veterinary Research, and Dr. Ismail H. Atun, of Ankara, Turkey, director of the Cattle Division, Ministry of Agricul-

French and Turkish Veterinarians at AVMA Headquarters

First row (left to right)—Mr. J. J. Shaffer (AVMA public relations department), Dr. O. Norling-Christensen (executive board), Dr. J. G. Hardenbergh (executive secretary), Dr. L. A. Merillat (editor emeritus), Dr. Jean-Pierre Thiery (France), Dr. J. W. Patton (ECA project manager-consultant), Dr. Ismail H. Atun (Turkey), Dr. R. C. Klussendorf (editor-in-chief), and Dr. J. V. Lacroix (publisher, The North American Veterinarian).

Second row (left to right)—Dr. Henri Drieux (France), Mr. Paul A. Delorme (France), Dr. Felician Senthille (France), Dr. Henri Gasse (France), Dr. Ali K. Bolat (Turkey), Dr. Rene Dufour (France), Dr. Edouard Mathieu (France), Dr. Mustafa Durusoy (Turkey), Dr. Pierre Chardeaux (France), and Dr. Andre Bouchet (France).

Back row (left to right)—Dr. Felix Lucam (France), Dr. Gustave L. Thieulin (France), Dr. Georges Roliet (France), Dr. Ahsen Adaoglu (Turkey), Dr. Pierre Saurat (France), and Mr. R. Martin (French interpreter): Dr. Cemalettin Omurtag (Turkey) was absent when the picture was taken.

ture, Turkish Government—responded to the addresses of welcome and told of the high regard their countries have for the accomplishments of American veterinarians.

Starting early in October, 1950, and continuing through the early part of December, the delegation visited colleges of veterinary medicine and other places of professional interest in the East, Middlewest, and South. The purpose of the tour, which was planned by the USDA and managed by Dr. John W. Patton, was to gather knowledge of American techniques that might be applied to the betterment of animal health services in their own countries. The group was composed primarily of men engaged in teaching, regulatory work, and research, only one member of the group being a private practitioner.

Members of the French party were Dr. Andre Bouchet, Dr. Pierre Chardeaux, Mr. Paul A. Delorme, and Drs. Henri Drieux, Rene Dufour, Henri Gasse, Felix Lucam, Edouard Mathieu, Georges Roliet, Pierre Saurat, Felicien Senthille, Jean-Pierre Thiery, and Gustave L. Thieulin. The Turkish party comprised Drs. Ahsen Adaoglu, Ismail H. Atun, Ali K. Bolat, Mustafa Durusoy, and Cemalettin Omurtag.

Dr. N. J. Miller Elected to Colorado State Senate

Dr. N. J. Miller, general practitioner of Eaton, Colo., and member of the AVMA Executive Board, was elected to a four-year term

Dr. N. J. Miller

in the State Senate on Nov. 7, 1950, to represent Colorado's seventh district (Weld County). This county has two senators and four representatives.

Before becoming a senator, Dr. Miller served in the state's House of Representatives (1943-1948). During that period, he gained wide recognition for his legislative ability as chairman of the finance committee and of committees concerned with public health and licensing of liquor sales. He also was a member of the Governor's committee on public health from 1945 through 1948.

Emergency Advisory Committee Meets

Because of a delay in transcribing the notes on the action taken by the AVMA National Emergency Advisory Committee, which met in the conference room and library of the AVMA office Nov. 21, 1950, the detailed report will be published in the February JOURNAL instead of the January issue, as promised. Dr. W. R. Krill, Columbus, Ohio, is chairman of this committee.

Brucellosis Congress

The Third Inter-American Congress on Brucellosis was held in Washington, D.C., Nov. 6-10, 1950, under the joint sponsorship of the Inter-American Committee on Brucellosis, the U. S. Committee on Brucellosis of the National Research Council, and the Pan American Sanitary Bureau, Regional Office of the World Health Organization, for the purpose of reviewing the advances in research on brucellosis that have been made since the last congress (Argentina, 1948).

The meetings consisted of formal discussions covering medical, veterinary, public health, and economic aspects of the disease. Scientific papers were presented in the following categories: (1) bacteriology; (2) veterinary research; (3) research in human brucellosis; (4) epidemiology; and (5) control. Speakers included Drs. James H. Steele, chief, Veterinary Public Health Services, Atlanta, Ga.; Martin M. Kaplan, veterinary officer, World Health Organization, Geneva, Switzerland; I. Forrest Huddleson, director, Brucella Laboratory, Department of Bacteriology and Public Health, Michigan State College, East Lansing; Karl F. Meyer, director, George Williams Hooper Foundation, University of California, San Francisco; D. T. Berman, assistant professor of veterinary science, University of Wisconsin, Madison; L. M. Hutchings, head, Department of Veterinary Science, Purdue University, LaFayette, Ind.; Martin H. Roepke, School of Veterinary Medicine, University of Minnesota, St. Paul; B. T. Simms, chief, U. S. Bureau of Animal Industry, Washington, D.C.; Carl L. Larson, director, Rocky Mountain Laboratory, Microbiological Institute, National Institutes of Health, Hamilton, Mont.

Tours of the laboratories of the Bureau of Animal Industry in Beltsville, Md., and of the

National Institutes of Health in Bethesda, Md., were included in the program of the convention.

Public health officials from all the countries of the Western Hemisphere, as well as from several European countries, attended the Congress.

s/WESLEY W. SPINK, *Chairman,*
U. S. Committee on Brucellosis.

Association of Land-Grant Colleges and Universities, Division of Veterinary Medicine

Twenty-one delegates attended the meeting of the Division of Veterinary Medicine of the Association of Land-Grant Colleges and Universities in the Town Room of the Statler Hotel, Washington, D.C., on Nov. 13-15, 1950. The scientific program included the following speakers and their subjects.

Dr. C. A. Brandly, Madison, Wis., was moderator of a panel discussion on "Teaching Veterinary Hygiene to Students of Agriculture." Other panel members were Drs. A. H. Groth, Columbia, Mo.; F. E. Hull, Lexington, Ky.; and W. T. Oglesby, Baton Rouge, La.; whose paper was read by Dr. Dennis Sikes, Knoxville, Tenn.

Colonel DeCoursey, M.C., U.S. Army: "Pathological Effects of Nuclear Explosions."

Dr. C. D. Lowe, USDA, Washington, D.C., was moderator of a panel discussion on "Types, Methods, and Techniques of Veterinary Extension Work." Also on the panel were Drs. A. Sanders, Gainesville, Fla.; A. L. Brueckner, College Park, Md.; W. R. Krill, Columbus, Ohio; and E. E. Leasure, Manhattan, Kan.

Dean R. S. Sugg, Auburn, Ala.: "Regional Training in Veterinary Medicine." This was also discussed by Dean I. B. Boughton, College Station, Texas; Dean Floyd Cross, Fort Collins, Colo.; and Dean T. J. Jones, Athens, Ga.

Dean Floyd Cross, Fort Collins, Colo.: "General Education in the Land-Grant Colleges and Universities.

The following officers were elected: Dean W. A. Hagan, Division senate representative to serve on the Association executive committee for two years; Drs. F. E. Hull and W. T. Oglesby, Division executive committee, for three years; Dr. H. Van Roekel, council of instruction, for three years. Dr. Glen Holm was elected to be the third Division representative in the Association senate. The Division executive committee then elected Dr. Hull chairman and Dr. Oglesby secretary. The chairman appointed the following program committee for next year: Drs. Glen Holm, chairman; Dean G. H. Hart, Drs. Dennis Sikes, C. A. Brandly, and E. F. Waller.

s/C. S. BRYAN, *Secretary.*

STUDENT CHAPTER ACTIVITIES

California Chapter.—A résumé of the activities of the University of California Student Chapter of the AVMA for 1949-1950 follows.

At the first meeting of the Chapter, Dean George Hart, the faculty, and the 42 students of the sophomore class (first class of the school) welcomed the 52 first year students. President Melvin Edick opened the meeting and introduced Dean Hart, who gave a brief history of the California School of Veterinary Medicine and introduced members of the faculty. The following officers served during the first semester: Melvin Edick, president; Jack Saunders, president-elect; Ernest M. Makino, secretary; Jack F. Saunders, treasurer.

At the October 10 meeting, Walter Hughes reported on his trip to Detroit as student representative of the Chapter. At the October 24 meeting, first year students were acquainted with the functions and aims of the Student Chapter. Dr. R. B. Frater, Sacramento, spoke on "A Typical Day in Large Animal Practice" at the December 7 meeting. The following officers were elected to serve during the second semester at the January 11 meeting: Del Anthony, president-elect; Ben Lundberg, vice-president; Jack Pflock, treasurer; and Wing Chin, secretary. Dr. Collinson, Turlock, discussed "The Clinic Setup in Veterinary Medicine and Problems and Advantages of a Partnership."

During the second semester, speakers and their subjects included: Drs. Philip A. Lee and Joseph L. Gidley, Capitol Pet Hospital, Sacramento, "Small Animal Practice"; and Dr. J. B. Enright, of the faculty, "The Role of the Veterinarian in Public Health." The following officers were elected to serve for the fall semester of 1950: Aaron Andrews, president-elect; Bob Abbott, vice-president; Wing Chin, secretary; and Jim Bittle, treasurer.

Social activities included a Christmas party, the Chapter's first annual dance at the Yolo Flyers' Club, and a steak fry.

The Chapter's baseball team was runner-up for championship of the intramural softball teams.

s/WING CHIN, *Secretary.*

WOMEN'S AUXILIARY

Mrs. MacDonald, First Vice-President.—Mrs. H. S. MacDonald of 51 Oakmont Road, Toronto, Ont., was born in Nova Scotia. After receiving her B.A. degree from Dalhousie University, Halifax, she taught in the high school until her marriage to Dr. H. S. MacDonald. Mrs. MacDonald has been active in her community, and has served as president of the Civilian Ladies Auxiliary (a service club). She is a past president of the Women's Auxiliary to the Ontario Veterinary Medical Association. This past summer, she helped to organize the Women's Auxiliary to the Canadian Veterinary Medical Association, and was elected secretary of this organization. This position, and that of first vice-president of the Women's Auxiliary to the AVMA, enables her

to bring about close coöperation between the women of the United States and Canada.

The Women's Auxiliary to the AVMA is fortunate to have had Mrs. MacDonald serve previously as fourth and second vice-presidents, respectively. As first vice-president, she works with

Mrs. H. S. MacDonald

the junior auxiliaries, and is inspiring great interest in these groups with the "News Letter" that she sends out each month containing news items compiled from information that she has received from each junior group.

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Colorado Auxiliary.—The Women's Auxiliary to the Colorado State Veterinary Medical Association met in Denver, Sept. 28-29, 1950. After registering on Thursday, a social time was enjoyed by auxiliary members. They were joined by their husbands in the evening for a banquet, dance, and delightful entertainment.

At an important business meeting held Friday, a committee was appointed to work on a constitution and by-laws. It was decided to help the Division of Veterinary Medicine library of the Colorado A. & M. College when sufficient funds were available.

The following officers were elected: Mrs. Lloyd C. Moss, Fort Collins, president; Mrs. L. Johnson, Denver, vice-president; Mrs. A. C. Herzberger, Colorado Springs, secretary-treasurer. Luncheon was served after the meeting.

s/MRS. A. C. HERZBERGER, *Secretary.*

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Florida Auxiliary.—The Women's Auxiliary to the Florida State Veterinary Medical Association met at the Delano Hotel, Miami Beach, Aug. 22, 1950. The president, Mrs. J. E. Scatterday, presided.

The Florida Auxiliary was organized in October, 1947, with 21 members and the following officers: Mrs. J. V. Knapp, president; Mrs. J. E. Scatterday, vice-president; and Mrs. V. L. Bruns, secretary-treasurer. At the 1950 meeting, membership had grown to 102, yearbooks had been printed, and two projects completed. A check for $25, for textbooks, was presented to the School of Veterinary Medicine, University of Georgia, and a $25 cash award was given to a first year student making the highest scholastic average at the School of Veterinary Medicine, Alabama Polytechnic Institute. These projects were voted to be continued for the coming year.

The new officers elected at this meeting were: Mrs. R. L. Brinkman, Live Oak, president; Mrs. Robert Knowles, Miami, vice-president; Mrs. V. L. Bruns, Williston, secretary; and Mrs. C. F. Simpson, Gainesville, treasurer. The out-going president, Mrs. J. E. Scatterday, presented a beautiful gavel and sound block to the Auxiliary, which was accepted by Mrs. R. L. Brinkman.

The Auxiliary was honored to have ten national officers present at this meeting.

s/MRS. V. L. BRUNS, *Secretary.*

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Western Michigan Auxiliary Formed.—At the September 21, 1950, meeting of the Western Michigan Veterinary Medical Association, the women formed an auxiliary. Officers elected are Mrs. Ted Jackson, Battle Creek, president; Mrs. Wayne Finkbeiner, Caledonia, vice-president; Mrs. Duane Kosht, Grand Rapids, treasurer; and Mrs. B. C. Hekhuis, Coopersville, secretary.

s/MRS. B. C. HEKHUIS, *Secretary.*

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Michigan Chapter Auxiliary.—More than 40 wives of members of the Michigan State Student Chapter of the AVMA have enrolled in a program of 19 evening classes offered by the School of Veterinary Medicine. The course is designed to give the wives some scientific fundamentals of veterinary medicine and includes feeding and care of dogs, fluoroscopy and radiology, telephone etiquette, animal first aid, veterinary medical terminology, bookkeeping, and the veterinarian's relation to federal and state disease control programs.

The guiding force behind the new program is Dr. Chester F. Clark, former state veterinarian and now head of the Department of Surgery and Medicine.

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Missouri Auxiliary.—The Women's Auxiliary to the Missouri Veterinary Medical Association held a luncheon meeting Oct. 16, 1950, at the Daniel Boone Hotel in Columbia. After visiting guests were introduced, delegates reported on the Miami Beach meeting, and Mrs. Hobreck told of her experiences and training in obtaining a seeing-eye dog.

A loan fund of $100 was established to be used

by students in the University of Missouri School of Veterinary Medicine.

s/Mrs. J. K. FARRELL, *Acting Secretary.*

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South Dakota Auxiliary.—The Women's Auxiliary to the South Dakota Veterinary Medical Association met in Sioux Falls, Oct. 12-13, 1950. On Thursday afternoon, a bridge and canasta party was held at the Carpenter Hotel. In the evening, a banquet and dance was enjoyed by members and their husbands.

A luncheon on Friday at the "Cottage" was concluded by a short entertainment and a business meeting. New officers elected for the coming year are: Mrs. R. M. Scott, Sioux Falls, president; Mrs. F. W. Nold, Madison, vice-president; Mrs. F. F. Smith, Emery, secretary-treasurer. Mrs. D. L. Cotton, Beresford, was appointed delegate to the meeting of the National Auxiliary to be held in Milwaukee in August, 1951.

s/MRS. F. F. SMITH, *Secretary.*

U. S. GOVERNMENT

Bovine Tuberculosis Declining in the United States.—Bovine tuberculosis is gradually declining in the United States, but continued effort is necessary to eradicate the disease completely. The number of reactors to the tuberculin test during the twelve months ending June 30, 1950, was 17,733, or 0.19 per cent of the total cattle tested. This is practically the same percentage as has been found during the last two years, but it is lower than that during the war years, when it rose to 0.2 per cent.

The Meat Inspection Division of the U.S. BAI is rendering a specific aid in the campaign by reporting cases of tuberculosis in cattle so that state and bureau officials are able to locate centers of infection promptly in areas where testing is not in progress. Cattle sent to slaughter are identified by recording the breed, age, weight, color markings, brands, ear-tag numbers, and other similar information. In one state, such information furnished to state officials enabled them to locate 300 tuberculin reactors during ten months.

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Veterinary Personnel Changes.—The following changes in the force of veterinarians in the U.S. Bureau of Animal Industry are reported as of Nov. 13, 1950.

NEW APPOINTMENTS

James G. Ball, Los Angeles, Calif.
Zackie H. Bridges, Jacksonville, Fla.
Louis D. Chedester, Los Angles, Calif.
Roy B. Conaway, Des Moines, Iowa.
DePaul J. Corkhill, Columbus, Ohio.
Wladyslaw J. Galecki, Los Angeles, Calif.
Cornelius Horan, Kansas City, Kan.
Josef Ilkiw, Chicago, Ill.
Alexander G. Johnstone, Richmond, Va.
Arthur A. Rohrer, Los Angeles, Calif.
Arnest Sonnenschein, Los Angeles, Calif.
William H. Waddell, Omaha, Neb.

RESIGNATIONS

Maurice F. Calhoun, Albuquerque, N. M.
G. Odell Howell, Chicago, Ill.
John H. Fussell, Atlanta, Ga.
Franklin K. Wills, Mexico City, Mex.

RETIREMENTS

Vernon J. Ayres, Sacramento, Calif.
Clarence J. Ballowe, Oklahoma City, Okla.
Elmer E. McDaniel, Chicago, Ill.
Ernest N. Moline, Moultrie, Ga.
Jacob Van de Erve, Bismarck, N. Dak.

DEATHS

Earl S. Mohr, Jackson, Miss.

MILITARY FURLOUGH

Philip D. Cazier, Topeka, Kan.
Jacob J. Schacter, Columbus, Ohio.
Murray H. Sherber, Oklahoma City, Okla.

TRANSFERS

Frederick W. Hansen, Jr., from St. Paul, Minn., to Denver, Colo.
Howard E. Ingram, from Beltsville, Md., to Denver, Colo.

APPLICATIONS

The listing of applicants conforms to the requirements of the administrative by-laws—Article X.

First Listing

ARMAS, JOSE L.
Rua da Garoupinha 24, Angra do Heroismo, Terceira, Azores.
D.V.M., Technical University of Lisbon, 1947.
Vouchers: N. A. Orr and C. D. Van Houweling.

CHAMPLIN, JOHN B.
918 Moreau Dr., Jefferson City, Mo.
D.V.M., Iowa State College, 1933.
Voucher: E. C. Cannon.

DANFORTH, ARTHUR L.
2217 Kensington Ave., Snyder, N.Y.
D.V.M., New York State Veterinary College, 1911.
Voucher: J. J. Regan.

HERRERA, MANUEL OLVERA
Av. Juarez No. 46, Tacuba, D.F., Mexico.
D.V.M., National School of Veterinary Medicine, San Jacinto, Mexico, 1948.
Vouchers: F. Camargo and A. Tellez Geron.

JOHNSON, MORRIS M.
R. D. 1, Hudson, N.Y.
D.V.M., New York State Veterinary College, 1934.
Voucher: J. J. Regan.

NACHTRIEB, MELVIN J.
Box 288, Salida, Colo.
D.V.M., Colorado A. & M. College, 1945.
Voucher: J. W. Harrison.

OTTESON, OSCAR A.
Waunakee, Wis.
D.V.M., Chicago Veterinary College, 1919.
Voucher: B. A. Beach.

PUNTRIANO, GUILLERMO O.
Calle San Martin 432, Miraflores, Lima, Peru.
D.V.M., University of San Marcos, Lima, Peru, 1946.
Vouchers: W. A. Hagan and M. G. Fincher.

SCOTT, VERNE A., SR.
Stephenville, Texas.
D.V.M., Kansas City Veterinary College, 1918.
Voucher: E. A. Grist.

SIBLEY, HOBART Q.
Rt. 4, Robstown, Tex.
D.V.M., Texas A. & M. College, 1946.
Voucher: E. A. Grist.

STONE, PERRY
Box 319, Sebastapol, Calif.
V.M.D., University of Pennsylvania, 1947.
Voucher: C. S. Travers.

Second Listing

ADAMS, CHARLES E. R., Highland, Md.

CASTOR, GORDON T., R. D. 1, Pt. Pleasant, W. Va.

FRANCE, WALKER, 1323 16th Ave., Bradenton, Fla.

GIDDENS, JOHN A., 160 Pryor St., Rm. 510, Atlanta, Ga.

HAMMERBERG, CARL E., 307 St. John Pl., New London, Wis.

HUDGINS, R. H., P.O. 1024, Statesville, N. Car.

KERESEY, DENNIS R., Danbury, Conn.

KNAPSTEIN, THEODORE L., Greenville, Wis.

LINAM, DUARD D., 506 E. 5th St., Austin, Texas.

MANOLSON, FRANK, 134 7th Ave., E., Calgary, Alta.

MASON, JOHN, C.M.A.P.E.F.A., Morelia, Mich., Mex.

MORAIS, ARMANDO A., Castelo de Sao Joao Baptista, Angra do Heroismo, Terceira, Azores.

PAREDES J., TOMAS, Sociedad Ganadera de Junin, Pachacayo, Peru.

RAMIREZ M., ALEJANDRO, Sociedad Ganadera de Junin, Pachacayo, Peru.

ROHWER, HAROLD H., Park Rapids, Minn.

SAITO, KOGI, 69, 4-chome, Fukazawamachi, Setagayaku, Tokyo, Japan.

SCHIEFELBEIN, RUDOLF E., Box 321, Floresville, Texas.

VELEZ L., MILAN O., Dept. of Biology, V.P.I., Blacksburg, Va.

1950 Graduate Applicants

First Listing

The following are graduates who have recently received their veterinary degree and who have applied for AVMA membership under the provision granted in the Administrative By-Laws to members in good standing of junior chapters. Applications from this year's senior classes not received in time for listing this month will appear in later issues. An asterisk (*) after the name of a school indicates that all of this year's graduates have made application for membership.

Colorado A. & M. College

ZANDER, DONALD V., D.V.M.
School of Veterinary Medicine, University of California, Davis, Calif.
Vouchers: H. G. Hill and O. R. Adams.

Iowa State College

ANDERSON, DONALD M., D.V.M.
Box 474, Bedford, Iowa.
Vouchers: H. D. Bergman and C. Murray.

CAHALAN, LEO J., D.V.M.
318 W. Main St., Mt. Horeb, Wis.
Vouchers: E. A. Benbrook and H. J. O'Connell.

Second Listing

Colorado A. & M. College

FIELDER, FRANCIS G., D.V.M., c/o Veterinary Hosp., N. Y. State Vet. Coll., Ithaca, N.Y.

HAYNIE, EUGENE D., D.V.M., Manassa, Colo.

Iowa State College

BATES, LLOYD L., D.V.M., Union, Iowa.

KOEPPEN, HARRY E., D.V.M., 405 J. St., LaPorte, Ind.

Ohio State University

ANDERSON, GERALD A., D.V.M., 703 Elm St., Salisbury, N. Car.

TAYLOR, HAL H., D.V.M., 133 W. Lane Ave., Apt. D, Columbus 1, Ohio.

Ontario Veterinary College

BAKER, JOHN M., D.V.M., 3415 Shuter St., Montreal, Que.

University of Pennsylvania

HERNANDEZ, RAUL D., V.M.D., P.O. Box 127, San Lorenzo, P. R.

Washington State College

FULLER, ROBERT H., D.V.M., 1168 16th St., Arcata, Calif.

AMONG THE STATES AND PROVINCES

Arizona

New Officers of U.S.L.S.A.—Officers elected at the fifty-fourth annual meeting of the U. S. Livestock Sanitary Association in Phoenix on Nov. 1-3, 1950, are Mr. F. E. Mollin, Denver, Colo., president; Drs. R. L. West, Waseca, Minn., first vice-president; T. Childs, Ottawa, Ont., second vice-president; F. D. McMahon,

Phoenix, Ariz., third vice-president; and R. A. Hendershott, Trenton, N. J., secretary-treasurer.

s/R. A. HENDERSHOTT, *Secretary.*

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State Association.—The annual meeting of the Arizona Veterinary Medical Association was held Dec. 8-9, 1950, at the San Marcos Hotel, Chandler. Out-of-state speakers included Drs. E. J. Frick, professor of veterinary surgery, Kansas State College, Manhattan; and G. Burch, research division, Pitman-Moore Company. Dr. A. M. Smith, Phoenix, was program chairman.

s/R. W. ADAMI, *Resident Secretary.*

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Association with a Record.—The Pima County Veterinary Medical Association includes all the practicing veterinarians in Pima County. It holds regularly scheduled meetings the third Wednesday of each month in Tucson. Dr. Paul McQuown, Tucson, is president of this up-and-coming association.

s/R. W. ADAMI, *Resident Secretary.*

California

Dr. Hurt Honored.—Dr. Leslie M. Hurt (ISC '04), who has announced his retirement after more than twenty-five years in charge of the Los Angeles County Livestock Department,

Dr. Leslie M. Hurt

was honored at a testimonial dinner at the Hollywood-Roosevelt Hotel on Nov. 20, 1950.

After receiving his D.V.M. degree, Dr. Hurt entered the Bureau of Animal Industry and later joined the faculty at Iowa State College, Division of Veterinary Medicine. He assumed the duties of experiment station veterinarian and professor of veterinary science at Michigan State College in 1907 and, in 1912, accepted the position of city veterinarian for Pasadena. Shortly thereafter, he accepted the position of livestock inspector of Los Angeles County. In 1924, he was authorized to organize a livestock department in charge of livestock disease control and sanitation.

Dr. Hurt served as president of the Southern California and California State veterinary medical associations, two terms on the Executive Board of the AVMA, and as president of the AVMA (1948-1949).

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Award to Dr. Austin.—Dr. Victor Austin (ISC '47) received the key award presented by the Van Nuys Junior Chamber of Commerce for his leadership in the cancer drive, community chest campaign, vote projects, Christmas activities, his work as head of the public health program, and his present position as chairman of the rabies prevention program.

The Van Nuys Junior Chamber of Commerce has a membership of 65 and serves a community of more than 80,000 people.

Connecticut

Fairfield County Association.—The first fall meeting of the Fairfield County Veterinary Medical Association was held Oct. 19, 1950, at Chimney Corners Inn, Stamford. Mr. E. S. Middleton, head of civilian defense in Stamford, presented an outline of civilian defense measures. He pointed out that besides the regular duties of food inspection and care of animals, in an emergency they plan to use veterinarians in aid stations. He also said that in the event of a heavy strain upon the usual hospital facilities, local small animal hospitals would be converted for human use.

A representative from the John M. Glover Agency, South Norwalk, Conn., discussed "Clients' Insurance."

s/WILLIAM R. LEGGETT, *Secretary.*

Georgia

South Georgia and Chattahoochee Valley Associations.—The South Georgia and Chattahoochee Valley Veterinary Associations held a joint meeting Nov. 12, 1950, in the Thomas Hotel, Thomasville. Dr. Irvin Myers, U.S. inspector in charge at the Rea Serum Co. in Tallahassee, Fla., discussed "Production of Serum and Virus and the Safeguards Taken."

An interesting discussion of the eradication of hog cholera was led by Dr. W. L. Sippel, Tifton. A resolution was introduced to the South Georgia Association and adopted unanimously, recommending to the chief of the Bureau of Animal Industry that steps be initiated to eradicate this disease.

Officers elected at the business meeting of the South Georgia Association were Drs. G. C. Toliver, Albany, chairman; Grady Young, Thomasville, vice-chairman; and W. L. Sippel, Tifton, secretary-treasurer.

s/W. L. SIPPEL, *Secretary.*

Hawaii

Personal.—Dr. Leslie A. Weight (COR '35), Hilo, has been elected district governor of Rotary International, world-wide service organization, for 1950-1951. Dr. Weight is chief veterinarian in charge of the Hawaii Island Sugar Planters' and Ranchers' Association, deputy territorial veterinarian, and a member of the Hawaiian Veterinary Medical Association and of the AVMA. He is a veteran of World War II.

Illinois

Chicago Association.—On Nov. 14, 1950, the Chicago Veterinary Medical Association met in the Palmer House. The program consisted of the following symposium on brucellosis.

Dr. C. Wesley Eisele, associate professor of medicine, the University of Chicago: "Human Relation to Brucellosis."

Dr. E. V. Morse (AVMA research fellow), Department of Veterinary Science, University of Wisconsin, Madison: "Canine Research and Brucellosis."

Dr. James A. Meany, chief county dairy inspector, Chicago Department of Health: "Public Health Aspect of Brucellosis."

Dr. L. R. Davenport, Department of Health, Springfield: "Public Health Association."

The delegation of veterinarians from France and Turkey attended the meeting and were introduced to the members.

s/ROBERT C. GLOVER, *Secretary.*

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New Staff Members.—Dr. T. R. Houpt (UP '50) has been appointed instructor in the Department of Veterinary Physiology and Pharmacology, College of Veterinary Medicine, University of Illinois. He was formerly on the staff of a small animal clinic in Philadelphia, Pa.

Dr. Ganeswar Biswal (MSC '50) is graduate assistant in the Department of Veterinary Pathology and Hygiene. Dr. Biswal, whose home is Augul, Orissa, India, also attended the Bihar Veterinary College, Patna, India. He is an associate member of the Michigan chapter of Sigma Xi and a member of the AVMA.

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Dr. Schmidt, Zoological Park Veterinarian.—Dr. Donald A. Schmidt (MSC '47) has been employed by the Chicago Zoölogical Society as veterinarian for the Chicago Zoölogical Park. Dr. Schmidt studied at the University of Minnesota Mayo Foundation from 1947 until he accepted his present position.

Indiana

Northeastern Association.—On November 14, the Northeastern Indiana Veterinary Medical Association met in Fort Wayne to hear Dr. H. E. Pinkerton, Fort Dodge, Iowa, discuss swine diseases, with special references to conditions experienced in the last two years.

s/J. L. KIXMILLER, *Resident Secretary.*

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Sixth District Association.—At the November 2 meeting of the Sixth District Veterinary Medical Association in Crawfordsville, Dr. R. V. Johnston of Zionsville spoke on "The Use of *Clostridium Perfringens*, Type D, Antitoxin, and Bacterin in Preventing Enterotoxemia or Pulpy Kidney Disease in Sheep." The following officers were elected: Drs. J. E. Bright, Crawfordsville, president; G. V. Keller, Danville, vice-president; and R. W. Harden, Lebanon, secretary-treasurer.

s/J. L. KIXMILLER, *Resident Secretary.*

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Tenth District Association.—Dr. and Mrs. O. B. Curry, Morristown, were hosts at the Nov. 16, 1950, meeting of the Tenth District Veterinary Medical Association. Guest speaker was Dr. F. A. Hall, extension veterinarian with Purdue University.

s/J. L. KIXMILLER, *Resident Secretary.*

Iowa

Interstate Association.—The thirty-sixth annual meeting of the Interstate Veterinary Medical Association was held at the Martin Hotel, Sioux City, on Nov. 1-2, 1950. The scientific program follows.

Dr. M. S. Thorpe, Canby, Minn.: "Poultry Practice."

Dr. George Larson, Breckenridge, Minn.: "Cattle Practice."

Dr. C. P. Schmidt, Worthington, Minn.: "Swine Practice."

Mr. Don Cunningham, Sioux City: "Public Relations."

Dr. H. S. Harshfield, Brookings, S. Dak., and F. F. Smith, Emery, S. Dak.: "Leptospirosis in Cattle."

Dr. Francis Armstrong, Vermillion, S. Dak.: "Leptospirosis Mastitis."

Dr. Russell Leeper, Des Moines: "Small Animal Practice."

Dr. Hugh Fitch, Missouri Valley: "Cesarean Section in Sows."

Dr. L. L. Eldred, Hull: "Hog Cholera Vaccines."

Dr. Eugene Ingmand, Red Oak: "The Animal Protein Factor in Swine Nutrition."

Dr. F. O. Lundberg, Wausa, Neb., was moderator of a panel discussion on "Swine Diseases." Other panel members were Drs. D. M. Stauch, Battle Creek; H. E. Hittle, Crofton, Neb.; R. J. Tabola, Jackson, Minn.; J. L. Noordsy, Marion, S. Dak.; and Joe Giffee, Cedar Rapids.

The motion pictures "Equine Infectious Anemia" and "Swine Erysipelas" were shown.

s/H. C. SMITH, *Secretary*.

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Midwest Small Animal Association.—The thirteenth annual meeting of the Midwest Small Animal Association was held Nov. 15, 1950, in the Hotel Burlington, Burlington. The scientific program follows.

Dr. H. W. Howell, University of Missouri, Columbia: "Regional Nerve Block," "Removal of the Cecum by Cauterization," "Application of Sling for Coxofemoral Luxation," and "Minor Surgery of the Eye."

Dr. C. L. Meginnis, Peoria, Ill.: "Surgical Aids" (demonstrated), "Cesarotomy under Local Anesthesia," "Abdominal Suturing," "Drainage of a Conchal Hematoma," "Trimming Ears," and "Bandaging of the Feet, Ears, and Abdomen."

Dr. R. E. Witter, University of Illinois, Urbana: "Conjunctival Flap Operation for Corneal Ulcer," "Repair of an Entropion," "Collecting, Storing, and Transfusion of Blood," and "Catheterization of a Bitch."

s/J. PORTER COBLE, *Secretary*.

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Phi Zeta Meeting.—Six of the eight chapters of the national society of Phi Zeta were represented at a meeting on Aug. 22, 1950, at the Shelbourne Hotel, Miami Beach.

Business affairs of the Society were discussed and acted upon.

The following new officers were elected: Drs. H. L. Foust, Iowa, president; L. C. Ferguson, Ohio, vice-president; E. A. Hewitt, Iowa, secretary-treasurer; R. A. Packer, Iowa, member of executive committee; W. S. Bailey, Alabama, member of executive committee.

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Personal.—Dr. Thomas G. Fultz (ISC '10), Pella, has been elected district governor of Rotary International, world-wide service organization, for 1950-1951. Dr. Fultz served as mayor of Pella from 1931 to 1943, and is a former city councilman. He has practiced in Pella for forty years.

Louisiana

Southwest Association.—The annual meeting of the Southwest Louisiana Veterinary Medical Association was held Nov. 14, 1950, in New Iberia. Officers elected for the coming year were Drs. J. A. Goodwin, Iberia, reelected president; B. M. Jolly, Lake Charles, vice-president; Lawrence H. Pease, LaFayette, reelected secretary-treasurer. Speakers on the program were Drs. H. B. Elliott, director of the Louisiana Diagnostic Laboratory in Baton Rouge; and F. B. Wheeler, acting state veterinarian, Baton Rouge. The films "Valiant Years," "Canine Clinical Cases," and "Lungworms in Cattle" were shown.

Dr. Louis Leonpacher, practitioner of LaFayette, was elected to the board of regional directors of the Louisiana Veterinary Medical Association to represent southwest Louisiana.

s/LAWRENCE H. PEASE, *Secretary*.

Maryland

State Association.—The Maryland State Veterinary Medical Association met at the Hotel Emerson, in Baltimore, on Dec. 7-8, 1950. The following scientific program was presented.

Dr. A. L. Brueckner, College Park: "Brucellosis Control Program."

Dr. J. L. Davidson, Upjohn Co., Kalamazoo, Mich.: "Anemias and Their Treatment" and "Fluids and Fluid Therapy."

Major W. S. Gochenour, Jr., Army Medical Service: "Leptospirosis" (with illustrations).

Dr. J. H. Brown, Marietta, Pa.: "The Effect of Antibiotics and Other Growth-Stimulating Substances in the Rations of Growing and Fattening Hogs."

Drs. Paul C. Brown, College Park; Richard Faber, Bel Air; Donald Lynch, Walkerville; and Irvin S. Frock, Reistertown, were members of a symposium on "Mastitis."

Dr. C. E. DeCamp, Pitman Moore Company, Scarsdale, N.Y.: "Small Animal Practice."

s/JOHN D. GADD, *Secretary*.

Massachusetts

State Association.—The regular monthly meeting of the Massachusetts Veterinary Association was held Nov. 15, 1950, at the Hotel Beaconsfield, Brookline. Dr. James A. Baker, New York State Veterinary College, Ithaca, discussed "Distemper and Allied Diseases." A lively discussion period followed his presentation.

Dr. James Fanning, Beverly, was admitted to membership in the Association at this meeting.

s/C. LAWRENCE BLAKELY, *Secretary*.

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Worcester County Association.—The Worcester County Veterinary Medical Association met Dec. 6, 1950, in Worcester. The program consisted of clinical presentations of neurologic cases in small animals. Several human neurologists also attended.

s/MARCUS M. MASON, *Secretary*.

Michigan

Western Association.—Host and hostess of the September 21 meeting of the Western Michigan Veterinary Medical Association in Charlotte were Drs. Richard A. Rann and Betty Wright. Dr. G. R. Moore, School of Veterinary Medicine, Michigan State College, East Lansing, discussed "Cattle Practice." Officers elected were Drs. James E. Cook, Holland, president; A. R. Wingerter, Big Rapids, vice-president; Paul V. Howard, Grand Rapids, secretary-treasurer.

Dr. and Mrs. F. M. Lamoreaux, Grand Rapids,

were host and hostess for the October 19 meeting of the Association. Dr. L. T. Lustig, osteopathic physician, Grand Rapids, was guest speaker. His subject was "Where Do We Go from Here?"

S/PAUL V. HOWARD, *Secretary.*

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Southeastern Association.—The Southeastern Michigan Veterinary Medical Association held a meeting on November 8 in Detroit at Herman Kiefer Hospital. The program included two short motion pictures on small animal surgery and a question and discussion period. Officers of the Association are Drs. D. L. Caswell, Royal Oak, president; I. H. Wood, Mt. Clemens, vice-president; S. R. Kelly, Detroit, secretary; and D. J. Francisco, Detroit, treasurer.

S/PAUL V. HOWARD, *Resident Secretary.*

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Dr. Bryan Honored.—Dr. C. S. Bryan, dean of Michigan State College School of Veterinary Medicine, was awarded an honorary membership in the Sociedad Mexicana de Medicina y Cirugia Zootechnicas "in acknowledgment of the great scientific contribution that you have made to our profession, and also for the many attentions and services that you have given to our doctors."

The presentation was made in a letter to Dean Bryan from Dr. Juan Gomez Pina, president of the Mexican society.

Minnesota

Dedication of Veterinary Clinic Building.—The dedication ceremony of the new veterinary clinic building at the University of Minnesota was held Oct. 25, 1950, at the University Farm. Dr. W. A. Hagan, dean, New York State Veterinary College spoke on "Veterinary Medical Education, Past and Present," and Dr. J. L. Morrill, president, University of Minnesota, officially dedicated the building on behalf of the regents of the University.

The two-story building houses staff offices, animal wards, examination rooms, surgery rooms, stalls for large animals, units for smaller farm animals, adequate isolation quarters, and ample space for postmortem examinations and clinical studies. There is also a clinical pathology unit which includes bacteriology, pathology, and clinical chemistry laboratories. For the use of the clinic staff, there are individual research laboratories; and the ambulatory clinic is well provided with office and laboratory facilities.

Following the dedication ceremonies, senior and junior students conducted visitors through the clinic.

The present staff of the clinic, under the direction of Dr. J. N. Campbell, includes eight members of the academic staff, seven clerical and technical staff members, and four part-time students. The School of Veterinary Medicine now has an enrollment of 172 students including 52 freshmen, 50 sophomores, 47 juniors, and 23 seniors.

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Short Course.—The twenty-seventh annual short course for veterinarians sponsored by the University of Minnesota Department of Agriculture was held Oct. 25-26, 1950, at the University Farm, St. Paul, with 125 veterinarians registering for the course. Guest speakers and their subjects were:

Dr. W. D. Pounden, Bureau of Animal Industry, Beltsville, Md.: "Calf Nutrition."

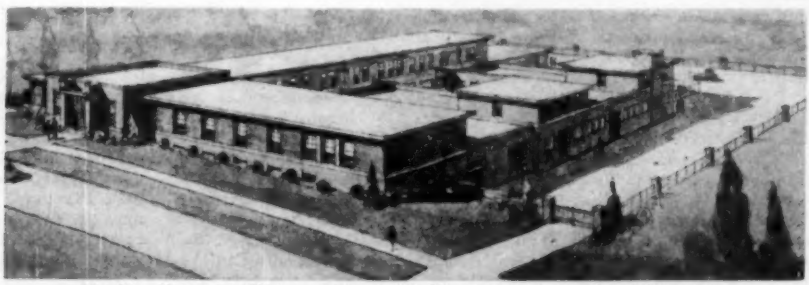
Dr. W. A. Hagan, dean, New York State Veterinary College, Cornell University, Ithaca: "Veterinary Medical Education, Its Evolution and Present Status" and "Disease Problems of Animals."

Dr. E. M. Baldwin, Jr., Biological Division, Corn States Serum Co., Omaha, Neb.: "Enterotoxemia of Sheep."

Dr. W. W. Armistead, A. & M. College of Texas, College Station: "Surgical Wound Healing in Small Animals."

Dr. Gerard Dikmans, Zoölogical Division, Bureau of Animal Industry, Beltsville, Md.: "Anaplasmosis in Cattle."

The motion pictures "Foot-and-Mouth Disease," "Surgical Procedures," and "The Leucocyte Response to Irritation" were shown.



The New Veterinary Clinic and Hospital Building at the University of Minnesota.

Demonstrations included laboratory diagnosis of anaplasmosis and parasitic diseases of cattle and sheep; clinical diagnosis of cattle affected with mastitis; laboratory procedures in the diagnosis of mastitis; anatomic sites and techniques used in local anesthesia; and techniques for parenteral dosage in small animals.

s/H. J. GRIFFITHS, *Resident Secretary.*

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Twin City Society.—Approximately 50 veterinarians attended the November 17 meeting of the Twin City Veterinary Medical Society at the Veterinary Building of the University of Minnesota in St. Paul. Mr. Frank Astroth, president of the Minnesota Livestock Breeders' Association and president of the Advisory Committee to the Governor on the brucellosis control program in Minnesota, discussed "The Livestock Industry Looks at Brucellosis Control." Dr. H. Bauer, bacteriologist, State Department of Health, spoke on "The Public Health Program and Brucellosis." Dr. R. L. West, Minnesota Live Stock Sanitary Board, St. Paul, presented a paper on "The Future Brucellosis Program in Minnesota."

s/HENRY GRIFFITHS, *Resident Secretary.*

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New Staff Appointments.—Two recent appointments have been made to the instructional staff of the School of Veterinary Medicine, University of Minnesota, St. Paul. Dr. John P. Arnold (ISC '41), formerly in general practice at Mora, has been appointed instructor in surgery in the Section of Clinics. From 1946 to 1948, Dr. Arnold was on the staff of Iowa State College in the Department of Surgery, where he fulfilled requirements for his M.S. degree.

From Kansas State College, Dr. Carl E. Rehfeld (KSC '47) has joined the Section of Pathology and Parasitology and will be in charge of the teaching and service work of the clinical pathology laboratory in the veterinary clinic.

New Jersey

Personal.—Mrs. H. C. Millar, wife of Dr. Millar, and mother of Dr. J. A. S. Millar, of Asbury Park and Deal, respectively, passed away on Nov. 18, 1950, after a long illness, at the age of 76. Dr. and Mrs. Millar celebrated their fifty-fifth wedding anniversary last September.

New York

New York City Association.—The regular meeting of the Veterinary Medical Association of New York City was held in the Keystone Room of the Hotel Statler on Nov. 1, 1950. Dr. James A. Baker, New York State Veterinary College, Ithaca, discussed "Infectious Diseases of Dogs."

Drs. H. M. Cox, Sol. Mirin, and A. Rotberg were admitted to membership in the Association.

s/C. R. SCHROEDER, *Secretary.*

Ontario

The Veterinary Service.—Dr. Gustave Labelle in his report on "La Médecine Vétérinaire au Canada" before the eighth Journées Vétérinaires d'Alfort (1949) pointed out that agriculture, particularly animal production, occupies a place of first importance to the Canadian people. The holdings of livestock and poultry as of 1946 were:

Horses	2,397,000
Dairy cattle	3,914,000
Other cattle	6,471,000
Sheep	3,378,000
Hogs	5,337,000
Poultry (all kinds)	90,285,000

To provide a health service for this immense possession, there are 1,100 veterinarians of whom about 50 per cent are engaged in practice. Canada needs a larger number of college-trained practitioners than its two veterinary colleges are able to provide. The immigration of foreign veterinarians to overcome the alarming situation is blocked by severe federal and provincial laws forbidding foreigners to engage in the practice of veterinary medicine. In Quebec, for example, it is illegal to issue licenses to veterinarians who are not Canadian subjects or who have resided in the province less than five years. There are municipal, provincial, and federal positions to be filled.

The Health of Animals Branch which needs a minimum of 500 graduate veterinarians has only 300, most of whom are engaged in bovine tuberculosis eradication, a service that is lagging because of insufficient personnel. Canadian veterinarians are also actively engaged with brucellosis control.

In the role of public functionaries, veterinarians earn from $3,000 to $5,000 annually and the earnings of practitioners range from $8,000 to $25,000 a year. • • •

Veterinary Fraternity.—The annual meeting of the Grand Council of the Omega Tau Sigma Fraternity was held at Guelph, Ontario, on Nov. 10-11, 1950, with members of the Delta (Ontario Veterinary College) Chapter as hosts. Delegates from six schools of veterinary medicine in Canada and the United States attended the meeting.

In conjuction with the meeting, the Delta Chapter's annual banquet was held in the Elizabeth Room of the Royal Hotel, Guelph, the evening of November 10. Dr. T. Lloyd Jones, acting principal of the Ontario Veterinary College, introduced the speaker of the evening, Dr. J. Markowitz, associate professor of physiology, Faculty of Medicine, University of Toronto, who spoke on "The Functions of a University."

Chapters represented at the meeting were the Alpha Chapter, (UP); Beta Chapter (COR); Gamma Chapter (OSU); Delta Chapter (ONT); Zeta Chapter (API); and Eta Chapter (GA).

New officers of the fraternity are Drs. J. T. Burriss, Columbus, Ohio, president; D. C.

MacKay, King, Ont., vice-president; Dean S. Folse, Auburn, Ala., secretary; E. Sunderville, Ithaca, N. Y., treasurer; and P. L. Piercy, Athens, Ga., historian.

s/T. LLOYD JONES, *Resident Secretary.*

Oregon

Portland Association.—The Portland Veterinary Medical Association has a regular meeting the second Tuesday of each month in the Auditorium of the Upjohn Company. Visiting veterinarians are cordially invited to attend as guests of the Association.

s/L. G. NICHOLSON, *Secretary.*

Pennsylvania

Keystone Association.—The November 29 meeting of the Keystone Veterinary Medical Association was held in the University Room of the Penn Sheraton Hotel, Philadelphia. Dr. William Bates, M.D., professor of surgery, University of Pennsylvania Graduate School of Medicine, and medical coördinator of civilian defense for Philadelphia, discussed "Civilian Defense." Dr. J. Stuart Crawford, immediate past-president of the AAHA and president of the Veterinary Medical Association of New York City, also discussed this subject.

s/R. C. SNYDER, *Secretary.*

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Dr. O'Rear Retires.—Dr. H. M. O'Rear (IND '12), Harrisburg, for the past three years state representative of the U.S. Bureau of Animal Industry, retired Nov. 25, 1950. Dr. Charles P. Bishop, director of the Bureau of Animal Industry in the Pennsylvania State Department of Argiculture, stressed the value of Dr. O'Rear's contribution to the revision of the state program of brucellosis eradication which includes the free vaccination of calves as a measure of control.

Among those who paid tribute to Dr. O'Rear at a farewell luncheon were Drs. A. E. Wight, Asa Winter, D. L. LaGrange, and W. E. Logan, who took Dr. O'Rear's place in the Bureau. Dr. and Mrs. O'Rear plan to live on their farm near Indianapolis, Ind.

South Dakota

State Association.—The Carpenter Hotel in Sioux Falls was headquarters for the annual meeting of the South Dakota Veterinary Medical Association on Oct. 12-13, 1950. About 105 veterinarians attended the meeting. The scientific program follows.

Dr. Ray Robinson, state veterinarian, Pierre: "Disease Conditions of South Dakota."

Dr. M. M. Davis, veterinarian in charge, BAI, Pierre: "A Report on Tuberculosis and Brucellosis Testing in South Dakota During the Past Year."

Dr. C. D. Lee, extension veterinarian, Iowa State College, Ames: "Poultry Disease Control."

Dr. Darrell S. Steele, practitioner, Minneapolis, Minn.: "Small Animal Practice."

Dr. E. T. Anderson, practitioner, Dixon, Ill.: "A Day in Veterinary Practice (with illustrations).

Mr. Peter Jans, Evanston, Ill.: "Silent Partner Insurance for the Veterinary Medical Profession."

Dr. John M. Higbee, practitioner, Albert Lea, Minn.: "Cesarean Section in the Sow" (with illustrations).

Dr. W. M. Coffee, La Center, Ky., president of the AVMA: "General Practice" (with illustrations).

Dr. Don H. Spangler, practitioner, Atwater, Minn.: "Cattle Practice."

Dr. L. S. Carpenter, Hormel Institute, Austin, Minn.: "Antibiotics and Swine Nutrition."

Officers elected for the ensuing year are Drs. S. E. Gray, Aberdeen, president; Kenneth E. Sadler, Wagner, vice-president; R. M. Scott, Sioux Falls, secretary-treasurer.

s/R. M. SCOTT, *Secretary.*

Texas

Southern Association Officers.—The following officers were elected at the annual meeting of the Southern Veterinary Medical Association in Dallas, November 8: Drs. McKenzie Heath, Birmingham, Ala., president; F. M. Kearns, Louisville, Ky, president-elect; A. A. Husman, Raleigh, N. Car., secretary; and M. R. Blackstock, Spartanburg, S. Car., treasurer.

s/A. A. HUSMAN, *Secretary.*

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State Association Officers.—Officers elected at the annual meeting of the Texas State Veterinary Medical Association in Dallas, Nov. 8, 1950, are Drs. I. B. Boughton, College Station, president; J. W. Barton, Temple, vice-president; H. H. Greenlee, Fort Worth, secretary; and E. W. Wupperman, Austin, treasurer.

s/H. H. GREENLEE, *Secretary.*

Washington

State Association.—The annual meeting of the Washington State Veterinary Medical Association was held in Yakima, September 22-23. A panel discussion on large animal diseases, with Dr. John Stevens as moderator, was well received. Among the subjects discussed on this panel were keratitis, fern poisoning, and pregnancy in cattle. A small animal panel, under the direction of Dr. George Duby of Centralia, was largely on virus infections and offered many helpful suggestions. Dr. Walter A. Rickner, pathologist from the University of Washington School of Medicine, discussed "Pathology of Tumors, Principally of the Carcinoma and Sarcoma Types" and showed slides made from specimens sent to him by veterinarians. Dr. Peter MacKintosh reported on the AVMA meeting in Miami Beach and on

the brucellosis committee. Dr. Ray Bradbury, Mt. Vernon, showed pictures he had made of pregnancy in the cow. The photography was excellent.

New officers of the association are Drs. T. Robert Phelps, Vancouver, president; John Stevens, Sequim, vice-president; J. L. Ellis, Olympia, secretary-treasurer. Trustees are Drs. John Stevens, Peter MacKintosh, E. E. Wegner, Norman Garlick, William Ritter, H. A. Trippeer, LaMar Gaw, T. Robert Phelps, and J. L. Ellis.

s/J. L. ELLIS, *Secretary.*

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Dr. Lash Retires from BAI.—After more that forty-three years of service with the U.S. Bureau of Animal Industry, Dr. Elmer Lash (KCVC '07) retired from the Bureau of Animal Industry, U.S. Department of Agriculture, Nov. 30, 1950, at the age of 70. He was veterinarian in charge of brucellosis and tuberculosis eradication work for the state of Washington, with headquarters at Olympia.

Wisconsin

Milwaukee Association.—On November 21, the Milwaukee Veterinary Medical Association met in the Wisconsin Humane Society lecture hall to see the film "Therapeutic Uses of Oxygen." Dr. G. Lewis was moderator of a group discussion.

S./K. G. NICHOLSON, *Secretary.*

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Northeastern Association.—The Northeastern Wisconsin Veterinary Medical Association met in the Hotel Beaumont, Green Bay, Oct. 18, 1950, with approximately 60 in attendance. Dr. R. C. Klussendorf, editor-in-chief of the AVMA publications, discussed "Ailments of Dairy Calves" (with illustrations); and Dr. A. G. Beagle, U.S. BAI, Madison, spoke on "Hyperkeratosis in Wisconsin." A discussion of the current situation in the Department of Agriculture and its Division of Livestock Sanitation followed.

At the dinner for 80 members and guests of the Association, Dr. Klussendorf spoke on "The Golden Rule for Veterinarians."

s/WM. MADSON, *Secretary.*

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Southeastern Association.—Dr. Roy Nichols of the University of Wisconsin, Madison, discussed "Physiology of the Rumen" at the Nov. 16, 1950, meeting of the Southeastern Wisconsin Veterinary Association at Chauncey's at Pipersville.

s/ROBERT CURTIS, *Secretary.*

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Dr. Buchholz Installs FM Radio Service in Car.—Dr. H.H. Buchholz (MSC '43), Wilton, has installed a two-way FM radio in his car so that he will be able to serve more efficiently the people in his area. His wife will be able to contact him anywhere within a 50-mile radius, which will save thousands of miles of traveling.

Wyoming

Grant for Research on Internal Parasites Renewed.—The effectiveness of teniatol [bis (5-chloro-2-hydroxy-phenyl) methane] in removing the fringed tapeworm from sheep was established by the original research grant of $1000 from Pitman-Moore Company, Indianapolis, Ind., to the Wyoming State Veterinary Laboratory and the Department of Parasitology, University of Wyoming. The grant, for investigation of the internal parasites of domestic animals, has been renewed to allow establishment of a research fellowship in parasitology at the University. s/J. F. RYFF.

FOREIGN NEWS

China

Rinderpest Immunization.—Cattle introduced from Europe to Hong Kong are being vaccinated on arrival with a lapinized virus. At the first sign of rise in temperature, 200 cc. of rinderpest antiserum are administered. This seems to control the infection and the duration of immunity is being studied.—*H. C. Watson, Vet. Rec., 62, (Sept., 1950).*

Cyprus

Conquest of Animal Plagues.—The feasibility of eradicating diseases of farm animals was demonstrated on the island of Cyprus during the past twenty years. Notwithstanding the difficulty of obtaining veterinary personnel in key positions, the veterinary service has totally exterminated bovine tuberculosis, brucellosis, sheep pox, goat pox, and warbles. And anthrax, which once caused heavy losses, has been practically eliminated.

Egypt

Regional Conferences.—The regional committee of the World Health Organization met at Istanbul, Sept. 4 to 8, 1950, to discuss the progress made in the first year of its operations in the eastern Mediterranean region.

Immediately following this regional committee meeting, there was a regional conference on health statistics which will try to develop uniform and up-to-date methods of compiling vital and health statistics and to encourage introduction of these methods throughout the area. The activities of this committee, which were reported and discussed, include malaria control demonstrations by teams in Pakistan and Iran; the establishment of a tuberculosis control training center in Turkey; services of consultants to countries of the Middle East, Ethiopia, and the North Africa coastal area; the fellowship program for the whole region; and the Epidemiological Intelligence Service maintained at Alexandria.

France

New Campaign Against Bovine Tuberculosis.—The incidence of tuberculosis among the bovine herds in the Department of Cher (*Bull. Acad. Vét.*, July, 1950) is so high that owners scorn the idea of invoking the aid of the law of 1933 which provides indemnities for slaughtered tuberculous cattle. The expense of the refection forbids. In Cher, from 30 to 40 per cent of the bovine herds are infected with tuberculosis. Some of the herds have an incidence of 80 per cent. Because the indemnities allowed would amortize less than 10 per cent of the loss, owners remain passive and inured to the embarrassing situation they have to face. On these accounts, the Department of Cher was set apart as a suitable region for testing the virtues of systematic BCG vaccination.

The campaign was started in 1949 by educating breeders on the complex operations of that prophylactic measure. Since few had ever heard of BCG, it was necessary to solicit the aid of the local and agricultural press and to otherwise cultivate an understanding of all the factors involved in putting the program to work under state control. An official document, "Livre Departmental de BCG," was circulated for guidance and for obedience of its exacting directives. Started in 1949, more than 150 herds have already been brought under departmental supervision.

Granted that the Cher experiment is continued consistently, the virtue of the Calmette-Guerin vaccine in the bovine species should soon be established.

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World's Poultry Congress.—The Ninth World's Poultry Congress will be held in Paris in 1951. Pursuant to the basic laws of the World's Poultry Science Association, these congresses are triennial events. Of the eight congresses, two were held in North America: Ottawa, Ont., 1927, and Cleveland, Ohio, 1939. The war interrupted the schedule for 1942 and 1945. The complete list of these events is: The Hague, Holland (1921); Barcelona, Spain (1924); London, Eng. (1930); Rome, Italy (1933); Leipzig. Germany (1936); Cleveland, Ohio (1939); Copenhagen, Denmark (1948). Invitations for the tenth congress are now being received for action at the Paris congress.

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Rapid Isolation of Anaerobes.—J. Brisou (*Ann. Inst. Pasteur*, Sept., 1950: 331-332) describes a medium and method of culturing anaërobic bacteria in open air. The medium is a papainized bouillon composed of beef, veal liver, and sodium succinate, named V.F.S. (viande, foie, sodium), used without any artifice to exclude air.

Clostridium welchi, Clostridium perfringens, Clostridium oedematiens, Clostridium tetani, Clostridium sporogenes, and *Clostridium septicum* all grew in a few hours without showing any change in their classical properties. Certain of the more exacting organisms also accommodated themselves to the new medium. However, *Veillonella vulvovaginitis* and *Staphylococus activus* did not respond. For certain species of Clostridium, it was not even necessary to add the sodium salt.

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Fish in Veterinary Medicine.—*Revue de Médecine Vétérinaire*, sponsored by the faculties of Lyon and Toulouse, publishes regularly a section on fishes: distribution, species, abundance, capture, flavor, economics, nutritive value—basic facts the veterinarian ought to know.

Great Britain

Veterinary Record Trapped.—The *Veterinary Record*, official organ of the National Veterinary Medical Association of Great Britain and Ireland, trapped by a dispute between the London Master Printers' Association and the London Society of Compositors, is appearing in abridged form. A typed insert in lieu of printed matter makes up a part of the skeleton issues. Apology was made to readers, contributors, and advertisers in the October 21 number "for the frustrations and inadequacies inseparable from such a situation." The *Record's* relations with the disputants are "cordial."

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Bovine Tuberculosis Eradication.—On a country-wide basis, tuberculosis eradication became an official program by legislative action Oct. 1, 1950. The general scheme of the National Veterinary Medical Association of Great Britain and Ireland, which has made important headway in that connection through the years by common consent, may now proceed unhindered toward its longtime objective (quoting the *Veterinary Record*): "the removal of the scourge of bovine tuberculosis from the herds of this country."

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Horse Meat.—The long controversy between the National Veterinary Medical Association and the Ministry of Food *et al.* on the one side and the knackers' industry and hippophagi on the other has led to the conclusion that while the consumption of horse meat must be continued on economic grounds (the disposal of useless horses), the breeding of horses specifically for meat should be discouraged. Says the *Veterinary Record*: "It is sad to reflect that our old friend the horse which provided the basis for the development of the veterinary art should again occupy the stage, not in his old glory but as a potential source of meat for man and dogs."

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International Foot-and-Mouth Disease Research Laboratory.—The prospects of subduing foot-and-mouth disease have brightened to such an extent in recent years that the Food and Agricultural Organization of the United Nations

and L'Office International des Epizoöties proposed an international research laboratory be established, preferably at the Institute of the British Foot-and-Mouth Disease Research Committee at Pirbright, on funds provided by the nations concerned. The declared purpose was not only to continue studies on the classification and maintenance of viral strains but more particularly to train specialists on foot-and-mouth disease eradication and to found a unique center for information on new outbreaks and for coördinated direction. The FAO and the OIE felt that the ground gained could be held only by concerted action among the different countries.

Holland

World-Wide Protection of Animals.—The First World Congress for the Protection of Animals was held at The Hague on Aug. 27-31, 1950. The Congress agreed to form a permanent organization to be composed of the great variety of societies devoted to animal welfare in all countries. Veterinarians attended as delegates from Sweden, Germany, Holland, Scotland, Eire, England, North Ireland, and others. In all, 111 societies from 27 countries participated. The subjects of the 49 papers concerned quarantine, transportation, zoo and circus animals, cruelty, docking of horses and dogs, surgery, working dogs, animal rescues, hunting problems, vegetarianism, education, and police protection.

Italy

English To Be Taught at Veterinary School.—The Facolta di Medicina Veterinaria, of the Universita Delgi Studi, in Milan, recently offered a course in English so that students will be able to read veterinary literature received from English-speaking countries. This faculty is the first in Italy to inaugurate such a plan. The course will be taught by Dr. Igino Martini, professor of infectious diseases at the University.

s/L. LEINATI, *Dean.*

Japan

Rinderpest Experiment.—An experiment to ascertain the feasibility of using the rinderpest single vaccination method in Japan is being continued at the Kyushu Branch of the National Animal Hygiene Experimental Laboratories under the supervision of a SCAP veterinarian. An imported strain, that was successfully applied in Formosa, is being used for the first time on Japanese cattle. The initial trial injections were made on July 25, 1950, and the results of the first experiment will be available shortly.

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Milk Standards.—Under new standards just issued, each specific dairy product processed and marketed in Japan will be determined according to composition, bacterial limits, pasteurization, and/or sterilization temperatures, cooling temperatures, and manufacturing procedures.

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Rabies Incidence.—From Jan. 1 to Sept. 2, 1950, 42 human deaths from rabies were reported, 1,437 human beings were bitten by dogs, and 681 cases of rabies in dogs were reported.

Mexico

Mass Vaccination of Dogs for Rabies.—The entire dog population of Ciudad Juarez, Mexico, was recently rounded up and vaccinated as one of

Dr. Aurelio Malaga Alba (center in business suit) organized and directed mass vaccination of dogs against rabies in Juarez.

a series of measures to stamp out this disease along the United States-Mexico border. Vaccination of the 3,500 dogs was a pilot project conducted by the Mexican health authorities, with the coöperation of the Pan American Sanitary Bureau, Regional Office of the World Health Organization, and will serve as a model for mass vaccination operations in other border towns.

Dr. Aurelio Malaga Alba, bureau veterinarian and coördinator of the rabies eradication program, organized and directed the project.

New Guinea

Tail-Switch Louse.—The tail-switch louse, *Hematopinus quadripertusus* Fahrenholz, is recorded as becoming more prevalent in Queensland, New Guinea, and the Solomon Islands. Distinguishing features and a key to diagnosis are given by F. H. S. Roberts, Yeerongpilly, Queensland.—*Austral. Vet. J. (June, 1950): 136-138.*

Norway

Lecturer in Virology Needed.—The award offered last year by the Conference Board of Associated Research Councils for a visiting lecturer in virology at the Veterinary College, Oslo, was not filled and has been re-offered for the academic year 1951-1952.

Poland

Hog Cholera Vaccine.—Crystal-violet vaccine prepared from the American strain of hog cholera virus is much more efficacious as an immunizing agent than that prepared from native strains, although in other important respects the two viruses are identical. Crystal-violet vaccine (Abstr. *Rec. med. vet,* Paris, Jan., 1950) is praised for being incapable of producing new centers of infection.

Switzerland

Epidemics of Q Fever in Workshops.—Epidemics of Q fever among factory workers of Zurich were traced to dust blown from nearby railway yards where the ground was contaminated in the washing of stock cars. Previously, doctors had been diagnosing these outbreaks as atypical pneumonia, grippe, and/or bronchitis. In general however, the disease occurred mainly among employees of stockyards and slaughterhouses.

Virgin Islands

More News from Dr. von Decken-Luers.—Following are excerpts from a letter from Dr. von Decken-Luers of the Virgin Islands, in response to a letter from Dr. C. D. Van Houweling, assistant executive secretary of the AVMA. Her application for the post of government veterinarian in the Islands was received with consternation in Washington, and a short time after her appointment she found she had bitten off "quite a chunk to chaw."

The Virgin Islands are comprised of three islands. St. Croix is the main agricultural island, St. Thomas, with a large and beautiful harbor, is the commercial island, and little St. John, a lovely, sparsely inhabited, mountainous island, where very little livestock is raised, is a favorite with tourists.

St. Croix boasts between 6,000 and 8,000 cattle, most of which are ¾ zebu and ¼ native crossed. They are all range fed and wild. We have quite a number of good native horses—small but sturdy with unbelievably healthy natural feet and legs. I have seen only 1 case of ringbone in two years. Goats and sheep abound and we have several hundred swine.

Virgin Island cattle are entirely free of both tuberculosis and brucellosis. Hemorrhagic septicemia, acetonemia, and many other diseases which plague the farmer in the States do not exist here.

Parasitism and anaplasmosis are our chief problems and the latter is decreasing in incidence as we progress in educating the stockmen to dip the animals regularly.

It is not a stockman's paradise, for breeding and land practices are primitive and sanitation almost nonexistent. Educating the natives is a long and tedious proposition, and they are too poverty-stricken to carry out better methods even when willing to do so.

The Virgin Islands have never had rabies, and we wish this status to continue. We require, apart from the animal's health certificate, a statement that no rabies has existed for a least six months prior to shipment in a radius of 50 miles from the point of origin. Also dogs and cats must be accompanied by a certificate of rabies vaccination and must *wear* a rabies tag.

Importation of farm stock is permitted only from the United States and only under the conditions prescribed in the regulations of the U. S. Bureau of Animal Industry.

VETERINARY MILITARY SERVICE

Status of Former Army Veterinary Corps Officers.—Many veterinarians who have served in the Army are uncertain as to whether they still hold Reserve commissions. The following information from the Surgeon General's Office should answer most questions on the subject.

The key to whether an individual once commissioned holds a Reserve commission lies in his letter of appointment. If the letter states that the appointment was made under Section 37, National Defense Act, as amended, sets forth the grade, serial number, and effective date, and states that "by direction of the President you are appointed in the Officer's Reserve Corps"—he holds a Reserve commission and it is still effective, unless notice of termination has been received from the Adjutant General.

In addition, some of the older letters of appointment do not mention Section 37, etc., nor Officers' Reserve Corps. However, they do mention that the appointment is in the Reserve, in connection with the individual's name, rank, and corps (e.g., John Smith, 1st Lt. Vet. Res.). Holders of such letters of appointment also hold a Reserve commission and it is still effective unless officially terminated.

Appointments in the Officers' Reserve Corps are for five years, subject to renewal. During the war, all Reserve commissions were automatically extended for the duration of the emergency plus six months. Since no official declaration has been made ending the emergency, such commissions are still in force, with the exception of those which have been terminated through resignation by the individual and acceptance by the government, or termination for cause or convenience of the government.

During World War II, many persons were com-

missioned directly in the Army of the United States (AUS). These commissions do not constitute appointment in the Officers' Reserve Corps. AUS commissions authorized during World War II, under the provisions of Section 37, National Defense Act, as amended, are valid and will remain in force for the duration of the War and six months thereafter. All other AUS commissions were terminated by Public Law 239 of the eightieth Congress.

If the letter of appointment or other pertinent papers have been lost and the individual is still uncertain of his Reserve status, he should write directly to the Adjutant General of the Army, attention: Reserve Branch, Washington 25, D.C. The letter should contain a direct request as to whether the individual holds a Reserve commission and, if so, whether the commission is in force at this time. The letter should contain the writer's army serial number.

Any statement to an individual concerning his Reserve status or nonstatus which comes from any source other than the Adjutant General is not official.

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No Extra Pay for Military Veterinarians.—Most, if not all, of the recent newspaper articles and news radio announcements concerning the "doctor draft" law (Public Law 779—81st Congress) have either stated or implied that veterinarians who may apply for appointment and volunteer for active duty with the Army or Air Force Veterinary Corps Reserve are, like Medical and Dental Corps officers, entitled to receive $100 per month additional pay. Such announcements were not correct and were not in accord with official military news releases (*see* Nov. JOURNAL, p. 435). These newspaper accounts seem to have left many readers with the impression that the additional pay provision is something of recent origin and connected with the Public Law referred to above. Such is not the case.

Following World War II, a severe shortage of Medical and Dental Corps officers developed. The Army Integration Programs of 1946 and 1947 had resulted in filling the Regular Army Veterinary Corps to its authorized strength, but was not successful in the cases of the Medical and Dental Corps. In a further effort to meet the military needs for personnel, both Regular and Reserve, for the Medical and Dental Corps of the Army, Navy, and Public Health Service, Congress passed the bill, Public Law 365 (80th Congress), which provided that officers of these corps would receive $100 per month additional pay. Inasmuch as there was no shortage of personnel in the Regular Army Veterinary Corps and adequate Reserves were on active duty, an effort to have the Veterinary Corps included within the provisions of the bill was not favorably received by the Congress.

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Personals.—Colonel W. O. Kester, chief of the Veterinary Division, Office of the Surgeon General, USAF, has been chosen for the second consecutive year to be the official veterinarian at the National Horse Show at Madison Square Garden from Oct. 31 to Nov. 8, 1950.

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Lieutenant Colonel Willard M. Van Sant, chief, Professional Services Branch, Veterinary Division, Office of the Surgeon General, USAF, represented the U. S. Air Force Veterinary Service at the American Public Health Conference Oct. 30-31, 1950, in St. Louis, Mo.

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Six officers of the USAF Veterinary Service were recently promoted to the permanent grade of lieutenant colonel. They are: Robert R. Miller, Willard M. Van Sant, Benjamin F. Leach, James R. Karr, Charles E. Robinson, and William D. Snodgrass.

BIRTHS

Dr. (KSC '44) and Mrs. W. H. Wert, St. Charles, Mo., announce the birth of a son, Richard Stewart, on July 12, 1950.

Dr. (WSC '36) and Mrs. F. R. Koutz, Columbus, Ohio, announce the birth of a son, Larry Paul, on Sept. 19, 1950.

Dr. (ISC '38) and Mrs. Myron S. Arlein, Newark, N.J., announce the birth of a son, Paul Howard, on Oct. 20, 1950.

Dr. (KSC '49) and Mrs. J. M. Aiken, South Sioux City, Neb., announce the birth of a son, John David.

DEATHS

Guy Bard (IND '08), 64, Louisville, Ky., died Aug. 24, 1950. Dr. Bard entered the U.S. Department of Agriculture in 1914, at Chicago, and was transferred to Louisville in 1916. He was veterinarian in charge at the Bourbon Stock Yards in Louisville when ill health forced him to retire in 1948. Dr. Bard is survived by his wife, one son, and a granddaughter.

★**William A. Anderson** (KCVC '07), 71, Sleepy Eye, Minn., died of a heart attack on Oct. 13, 1950. Dr. Anderson, who had been engaged in general practice, was a member of the AVMA for more than forty years.

George W. Andree (MSC '29), 43, Rensselaer, Ind., died in October, 1949. Dr. Andree was a member of the Indiana State and of the Northwestern Indiana veterinary medical associations. He had been a member of the AVMA.

★**Harold E. Bryan** (IND '14), 62, Angola, Ind., died in March, 1949. Dr. Bryan was admitted to the AVMA in 1918.

★Indicates members of the AVMA.

Lou Clem (IND '14), Richmond, Ind., died late in 1949. Dr. Clem had been engaged in small animal practice.

D. E. DeMoulin, Lancaster, Ont., died March 29, 1950.

★**Ervin M. DeTray** (ONT '07), 67, Napoleon, Ohio, died June 18, 1950, of a heart attack. Dr. DeTray, who had practiced in Napoleon for forty-one years, had also served the city as mayor for two terms and as president of the school board for tweny-one years. He was a member of the Ohio State Veterinary Medical Association and was admitted to the AVMA in 1916. Dr. DeTray is survived by his widow, Mabel Kuder DeTray; two sons, Donald (OSU '40) and Norman; and a daughter, Mrs. P. Heckler.

Quincy C. Dobbins (IND '12), Bedford, Ind., died in November, 1949.

★**Colonel Harold E. Egan** (OSU '11), 64, Washington, D.C., died Oct. 18, 1950, in Walter Reed General Hospital. Colonel Egan entered active duty as a second lieutenant, Officers Reserve Corps, in 1917, and advanced through the grades to the rank of colonel, September, 1939. He was a graduate of the Medical Field Service School and an honor graduate of the Army Veterinary School, serving as director of the latter school from 1931 to 1935. During World War II, he served as veterinarian of the Seventh Service Command, and from December, 1946, to November, 1949, he was theater veterinarian in Europe. Colonel Egan was awarded the Victory Medal, the Commendation Ribbon, and the Legion of Merit for outstanding service. He retired on May 22, 1950. Colonel Egan was a member of the AVMA for thirty years.

J. N. Ellah (ONT '15) died April 12, 1950.

Henry H. Haigh (UP '11), 60, Trenton, N.J., died Oct. 11, 1950. Dr. Haigh retired in 1945 after twenty-five years of service with the State Department of Agriculture. He is survived by his widow, Martha Smith Haigh, and three sons.

Frank H. Haner (COR '14), 60, Windham, N.Y., died on June 9, 1950, of a cerebral hemorrhage following an illness of two years. Dr. Haner had practiced at Windham for thirty-five years. The practice is being continued by his son, Frank Haner, Jr., (COR '43). Dr. Haner was a member of the Hudson Valley Veterinary Medical Association and had been a member of the AVMA.

Charles F. Keane (SF '97), 76, Sacramento, Calif., died Oct. 19, 1950. Dr. Keane was California's second state veterinarian and for forty years was an official of the California State Division of Animal Industry, retiring in 1944. He was the outstanding pioneer leader in the state in meat inspection development and administration, and his plan became the basis for the state meat inspection law in 1921. One of his outstanding public services was the compilation of the official state report on the eradication of foot-and-mouth disease in California in 1924 and 1925. Dr. Keane is survived by two sons and two daughters.

Milton H. Lidikay (ONT '07), Toronto, Canada, died in June, 1949. Dr. Lidikay had been engaged in general practice.

John J. Millimaki (CVC '18), Ishpeming, Mich., died in June, 1950. Dr. Millimaki was a veteran of World War I.

John P. O'Connor (McK '00), 63, Nashville, Tenn., died Sept. 30, 1950. Dr. O'Connor had served with the Bureau of Animal Industry in 11 states and had also engaged in private practice. He retired in April, 1947. His widow, Minnie Ewald O'Connor, two sons, and three daughters survive him.

John W. Pritchard (McK '10), Oshkosh, Wis., died Oct. 17, 1950.

Charles W. Reed (STJ '18), Harrison, Ark., died May 28, 1950. Dr. Reed had served with the U. S. Bureau of Animal Industry.

James L. Rolfe (ONT '12), 70, Avoca, N.Y., died April 6, 1950. Dr. Rolfe had practiced in Avoca for thirty-six years.

Oscar F. West (CHI '11), 64, Sheldon, Ill., died at his home on May 21, 1950, after an illness of eleven years. Dr. West had been a member of the AVMA.

Frederick C. Willett (McK '01), Princeton, Ill., died March 31, 1950. Dr. Willett had served with the Illinois State Department of Agriculture.

★**Floyd W. Young** (MSC '30), 43, East Lansing, Mich., died Oct. 12, 1950, in a tragic accident when the tractor he was to use to take a group of young people on a hayride rolled over on him. Dr. Young had been on the faculty at Michigan State College since 1928, when he was graduate assistant in the Department of Anatomy. At the time of his death, he was professor in the Department of Surgery and Medicine. Dr. Young was a member of the Michigan State Veterinary Medical Association and of the AVMA.

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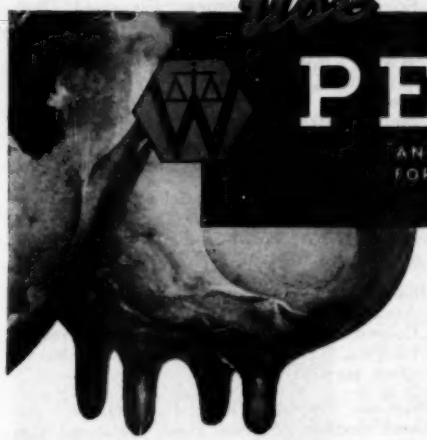

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An'Related Topics

WATCH YOUR ENGLISH AND OURS

Plurals *(Concluded)*

The writing of plurals for scientific terms is a subject deeper than grammar. Since top medical and scientific writers are not in accord as to what is correct in this respect, we will touch the matter lightly in this column, because space does not permit a complete discussion of such a complex subject.

We still blue pencil elementary freaks such as "Herbivorae," "Salmonellae," and the like, because writers are so apt to mistake these Latin words for the feminine singular of the first declension instead of the masculine plural of the declension to which they belong. Is it unreasonable to expect college-educated writers to have at least that much knowledge of Latin grammar?

To be more clear, *Herbivora, Salmonella,* etc., are proper, collective nouns. They refer to all of the individuals of the stated group—as much so as the common, collective nouns *cattle, sheep, people, livestock,* and so on, to which no one familiar with English would append a plural ending. Hundreds of zoölogical and botanical names of orders, families, subfamilies, and genera are involved. Being proper nouns, they are capitalized but, being extremely bothersome to the best writers, the trend has been to fabricate common plurals for them. Thus, usage has accepted such convenient plurals as *bacteria* (Bacterium), *micrococci* (Micrococcus), *coccidia* (Coccidium), *clostridia* (Clostridium), *streptococci* (Streptococcus), *ascarids* (Ascaris), *nematodes* (Nematoda), *cattle* (Bovidae), *horses* (Equus), etc., through an endless list of technical terms of scientific writings. For the many such words that usage has not transformed to common nouns, the important warning is to stop trying to make plurals for words already plural—Salmonella and Pasteurella are as plural as *cats* and *cattle* and *horses* and *people.*

(Continued on p. 26)

COMING MEETINGS

Notices of Coming Meetings must be received by 4th of month preceding date of issue

American Association for the Advancement of Science. Annual meeting. Cleveland, Ohio, Dec. 26-30, 1950. Raymond L. Taylor, 1515 Massachusetts Ave., N. W. Washington 5, D. C., assist. admin. secretary.

Pennsylvania, University of. Annual conference for veterinarians, Jan. 2-3, 1951. R. A. Kelser, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa., dean.

New York State Veterinary College. Annual conference for veterinarians. Cornell University, Ithaca, N. Y., Jan. 3-5, 1951. W. A. Hagan, dean.

Ohio State Veterinary Medical Association. Annual meeting. Deshler-Wallick Hotel, Columbus, Ohio, Jan. 3-5, 1951. Fred J. Kingma, 121 E. Weber Rd., Columbus 2, Ohio, secretary.

Oklahoma Veterinary Medical Association. Annual meeting. Skirvin Hotel, Oklahoma City, Okla., Jan. 8-9, 1951. Lewis H. Moe, 1736 W. 3rd Ave., Stillwater, Okla., secretary.

Maine Veterinary Medical Association. Annual meeting. Pittsfield, Maine, Jan. 10, 1951. S. D. Merrill, Augusta, Maine, secretary.

Indiana Veterinary Medical Association. Annual meeting. Hotel Severin, Indianapolis, Ind., Jan. 10-12, 1951. W. W. Garverick, Zionsville, Ind., secretary.

Ontario Veterinary Association. Annual convention. Royal York Hotel, Toronto, Ont., Jan. 10-12, 1951. T. Lloyd Jones, Ontario Veterinary College, Guelph, Ont., resident secretary.

Wisconsin Veterinary Medical Association. Winter meeting. Schroeder Hotel, Milwaukee, Wis., Jan. 10-11, 1951. B. A. Beach, Genetics Building, University of Wisconsin, Madison, Wis., secretary.

Tennessee Veterinary Medical Association. Annual meeting. Maxwell House Hotel, Nashville, Tenn., Jan. 15-16, 1951. H. W. Nance, 417 N. Military St., Lawrenceburg, Tenn., secretary.

Iowa Veterinary Medical Association. Annual

(Continued on p. 28)

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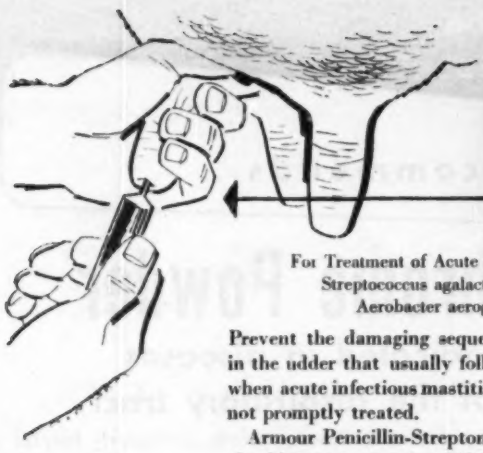

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(WATCH YOUR ENGLISH — *continued from p. 24*)

In short, know your word before attaching a plural in error.

Finally, AVMA editors do not permit the use of the plural form for abbreviations: *yrs., hrs., mos., lbs., mgs.,* etc., for the obvious reason that the *s* is not essential. The number indicates the plurality. Such abbreviations as *40 lb., 6 yr., 24 hr.,* etc., are not improved by adding the *s*. Moreover, the *s* creates freak words: *mis.* for *miles, ccs.* for *cubic centimeters, das.* for *days,* and other inelegant contractions.

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No. 7

DOG RESEARCH NEWS

Care of a Bitch During Pregnancy

Be sure to prepare a whelping pen or box 10 days before the whelping bitch is due. At first she will probably ignore the box, even sleeping or sitting as far from it as she can get. But when labor starts, she will usually accept this convenience. For the small breeder, a box may be used for whelping, but the better system is to have a pen (see cut). It is important that during pregnancy, we keep the bitch in peak condition by feeding her a good ration. Many famous mothers have whelped famous sons and daughters on a prenatal diet of Friskies—a nourishing, *complete* dog food.

NOTE: It goes without saying that if any complications arise it is important to consult your veterinarian.

When to Worm a Puppy

Puppies can be wormed as early as the third week, but it is preferable to wait until they are completely weaned at the sixth week. The treatment should be repeated 8 to 10 days later, and this double treatment given at intervals of approximately every two or three months until the dog matures. This treatment, properly given, will cause no harmful effects and will permit the animals to develop normally. For extra assurance of normal development, be sure to feed Friskies from weaning time.

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Runs and pens should also be subjected to sun during the hot season to completely kill roundworm eggs. This photo, taken at the Albers Research Kennels, illustrates the sanitary runs used there.

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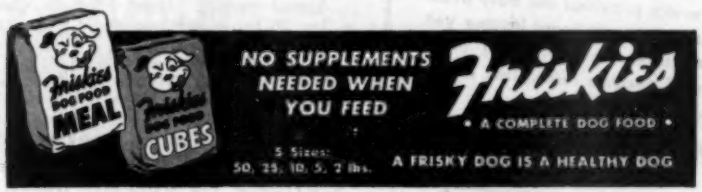
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(COMING MEETINGS — *continued from p. 24*)

meeting. Hotel Fort Des Moines, Des Moines, Iowa, Jan. 17-19, 1951. F. B. Young, P.O. Box 6, Waukee, Iowa, secretary.

Kansas State Veterinary Medical Association. Annual meeting. Allis Hotel, Wichita, Kan., Jan. 17-19, 1951. Olin W. Morris, 204 N. 32nd St., Parsons, Kan., secretary.

Intermountain Veterinary Medical Association. Annual meeting. Newhouse Hotel, Salt Lake City, Utah, Jan. 18-20, 1951. M. L. Miner, Logan, Utah, secretary.

Mississippi Veterinary Medical Association. Annual meeting. Edwards Hotel, Jackson, Miss., Jan. 19-20, 1951. John A. Randle, West Point, Miss., secretary.

California State Veterinary Medical Association. Annual mid-winter conference. University of California's School of Veterinary Medicine, Davis, Calif., Jan. 22-24, 1951. Mr. Charles S. Travers, 3004 16th St., room 208, San Francisco, Calif., secretary.

Louisiana Veterinary Medical Association. Annual conference. Louisiana State University, Baton Rouge, La., Jan. 23-24, 1951. R. B. Lank, Louisiana State University, Baton Rouge 3, La., secretary.

North Carolina State College of Agriculture and Engineering of the University of North Carolina. Annual conference for veterinarians. Jan. 23-26, 1951. C. D. Grinnells, chairman, North Carolina Veterinary Conference, Raleigh, N. Car.

Massachusetts Veterinary Association. Monthly meeting. Hotel Beaconsfield, Brookline, Mass., Jan. 24, 1951. C. Lawrence Blakely, 180 Longwood Ave., Boston 15, Mass., secretary.

Michigan State College. Annual postgraduate conference for veterinarians. School of Veterinary Medicine, Michigan State College, East Lansing, Mich., Jan. 24-25, 1951. C. S. Bryan, dean.

Virginia State Veterinary Medical Association, Winter meeting. Hotel Roanoke, Roanoke, Va., Jan. 29-31, 1951. Harry K. Royer, 1404 Main Street, Lynchburg, Va., secretary.

Illinois State Veterinary Medical Association. Annual meeting. Hotel Sherman, Chicago, Ill., Jan. 30-Feb.1, 1951. A. G. Misener, 6448 North Clark St., Chicago 26, Ill., secretary.

Minnesota State Veterinary Medical Society. Annual meeting. Hotel Nicollet, Minneapolis, Minn., Jan. 31-Feb. 2, 1951. B. S. Pomeroy, School of Veterinary Medicine, University of Minnesota, St. Paul 1, Minn., secretary.

New Jersey, The Veterinary Medical Association of. Annual meeting. Hotel Hildebrecht,

(*Continued on p. 30*)

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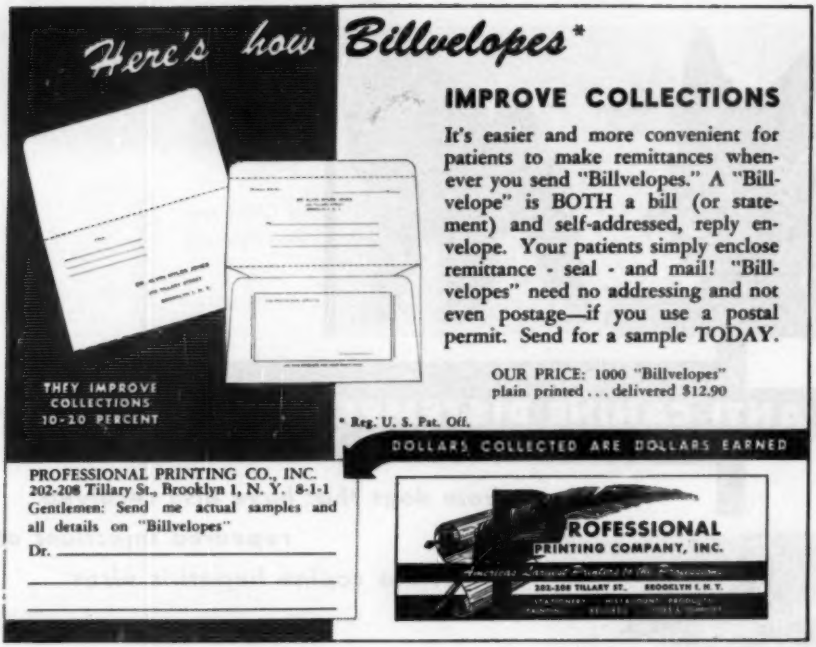
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(COMING MEETINGS — *continued from p. 28*)

Trenton, N.J., Feb. 8-9, 1951. J. R. Porteus, P.O. Box 938, Trenton, N.J., secretary.

West Virginia Veterinary Medical Association. Annual meeting. Hotel Greenbrier, White Sulphur Springs, W. Va., Feb. 11-12, 1951. James P. Bailey, Bluefield, W. Va., secretary.

American Animal Hospital Association. Annual meeting. Chalfonte-Haddon Hall, Atlantic City, N.J., May 2-5, 1951. Wayne Riser, 5335 Touhy Ave., Skokie, Ill., secretary.

American Society for the Study of Sterility, The. Annual meeting. Ritz-Carlton Hotel, Atlantic City, N.J., June 8-10, 1951. Walter W. Williams, 20 Magnolia Terrace, Springfield 8, Mass., secretary.

North Carolina State Veterinary Medical Association. Annual meeting. Hendersonville, N. Car., June 8-9, 1951. J. H. Brown, Tarboro, N. Car., secretary.

Oklahoma conference for veterinarians. June 11-12, 1951, veterinary clinic, Oklahoma A. & M. College, Stillwater, Okla. J. W. Wolfe, Oklahoma A. & M. College, School of Veterinary Medicine, Stillwater, Okla., chairman.

American Veterinary Medical Association. Annual meeting. Milwaukee Auditorium, Milwaukee, Wis., Aug. 20-23, 1951. J. G. Hardenbergh, American Veterinary Medical Association, 600 S. Michigan Ave., Chicago 5, Ill., executive secretary.

Regularly Scheduled Meetings

Bay Counties Veterinary Medical Association, the second Tuesday of each month. Russell P. Cope, 1205 San Pablo Ave., Berkeley 6, Calif., secretary.

Central California Veterinary Medical Association, the fourth Tuesday of each month. Thomas Eville, Route 1, Box 136H, Fresno, Calif., secretary.

Chicago Veterinary Medical Association, the second Tuesday of each month. Robert C. Glover, 1021 Davis St., Evanston, Ill., secretary.

East Bay Veterinary Medical Association, bimonthly, the fourth Wednesday. O. A. Soave, 5666 Telegraph, Oakland, Calif., secretary.

Fayette County Veterinary Association, Iowa, the third Tuesday of each month, except in July and August, at Pa and Ma's Restaurant, West Union, Iowa. Donald E. Moore, Box 178, Decorah, Iowa, secretary.

Greater St. Louis Veterinary Medical Association. Ralston-Purina Research Building, St. Louis.

(*Continued on p. 32*)

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(COMING MEETINGS — *continued from p. 30*)

Mo., the first Friday in February, April, June, and November. W. C. Schofield, Dept. of Animal Pathology, Ralston-Purina Co., St. Louis 2, Mo., secretary.

Houston Veterinary Medical Association, Houston, Texas, the first Thursday of each month. Edward Lepon, Houston, Texas, secretary-treasurer.

Illinois Valley Veterinary Medical Association, the second Wednesday of even-numbered months. R. A. Case, 400 S. Garden St., Peoria, Ill., secretary.

Indiana Tenth District Veterinary Medical Association, third Thursday of each month. L. A. Snider, New Palestine, Ind, secretary.

Jefferson County Veterinary Society of Kentucky, Inc., the first Wednesday evening of each month, in Louisville or within a radius of 50 miles. F. M. Kearns, 3622 Frankfort Ave., Louisville 7, Ky., secretary.

Kansas City Veterinary Medical Association, the third Tuesday of each month, in the Hotel Continental, 11th and Baltimore, Kansas City, Mo. K. M. Curts, 70 Central Ave., Kansas City 18, Kan., secretary.

Keystone Veterinary Medical Association, School of Veterinary Medicine, University of Pennsylvania, Philadelphia, Pa., the fourth Wednesday of each month, October through May. Leonard Krawitz, 5300 Lancaster Ave., Philadelphia 31, Pa., secretary.

Maricopa County Veterinary Association, the second Tuesday of each month. Charles J. Prchal, 1722 East Almeria Road, Phoenix, Ariz., secretary.

Michiana Veterinary Medical Association, the second Thursday of each month. Write R. W. Worley, secretary, 3224 L.W.W., South Bend, Ind., for location.

Michigan, Southeastern Veterinary Medical Society. Herman Kiefer Hospital, Detroit, Mich., the second Wednesday of each month from October through May.

Milwaukee Veterinary Medical Association. Wisconsin Humane Society, 4150 N. Humbolt Ave., Milwaukee, Wis., the third Tuesday of each month. Kenneth G. Nicholson, 2161 N. Farwell Ave., Milwaukee, Wis., secretary.

Monterey Bay Area Veterinary Medical Association, the third Wednesday of each month. C. Edward Taylor, 2146 South Broad St., San Luis Obispo, Calif., secretary.

New York City Veterinary Medical Association. Hotel Statler, New York, N. Y., the first Wednesday of each month. C. R. Schroeder, Lederle Laboratories, Inc., Pearl River, N. Y., secretary.

North San Joaquin Valley Veterinary Medical Association, the fourth Wednesday of each month. V. E. Graff, Oakdale, Calif., secretary.

Orange Belt Veterinary Medical Association, the second Monday of each month. James R. Ketchersid, 666 East Highland Avenue, San Bernardino, Calif., secretary.

(*Continued on p. 34*)

Puzzle with a Fast Answer... MASTICS® P&S

Yes—cows are back on the milking line sooner—in full-scale production of salable milk—with the Mastics method of mastitis control.

MASTICS ARE the *original* udder bougie—penicillin and streptomycin in a slim, smooth, quickly-soluble stick . . . tapered ends for easy insertion.

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Member Associated Serum Producers, Inc.

(COMING MEETINGS — *continued from p. 32*)

Orange County Veterinary Medical Association, bimonthly, the second Tuesday of each month. J. H. Bower, P. O. Box 355, Santa Ana, Calif., secretary.

Peninsula Veterinary Medical Association, the third Monday of each month. E. W. Paul, Box 866, Redwood City, Calif., secretary.

Pima County (Arizona) Veterinary Medical Association, the third Wednesday of each month, in Tucson. R. W. Adami, 2103 S. 6th Ave., Tucson, Ariz., resident secretary.

Portland (Oregon) Veterinary Medical Association, the second Tuesday of each month, in the Auditorium of the Upjohn Company. L. G. Nicholson, 8415 S.E. McLoughlin Blvd., Portland 2, Ore., secretary.

Redwood Empire Veterinary Medical Association, the third Thursday of each month. John E. Wion, 3164 Redwood Highway South, Santa Rosa, Calif.

Roanoke-Tar (N. Car.) Veterinary Medical Association, the first Friday of each month, 7:00 p.m., in Rocky Mount. G. L. Gilchrist, Edenton, N. Car., secretary.

Sacramento Valley Veterinary Medical Association, the fourth Friday of each month. R. C. Goulding, 11511 Capitol Avenue, Sacramento, Calif., secretary.

San Diego County Veterinary Medical Association, the fourth Tuesday of each month. R. J. McFarland, 3621 Jewell St., San Diego 9, Calif., secretary.

Southern California Veterinary Medical Association, the third Wednesday of each month. D. H. McDole, 8674 Melrose Ave., Los Angeles 46, secretary.

South Florida Veterinary Society, the third Tuesday of each month, 8:00 p.m., at the Peckway Skeet Club, Robert P. Knowles, 2936 N.W. 17th Ave., Miami, Fla., secretary.

Tulsa Veterinary Medical Association, the third Thursday of each month, 8:00 p.m., at the Tulsa Hotel. R. S. Todd, 1222 S. Lewis, Tulsa, Okla., secretary.

Foreign Meetings

First Pan-American Veterinary Conference. Lima, Peru, May 20-26 (tentative), 1951. José Santivañez, dean, Veterinary College, San Marcos University, Lima, Peru.

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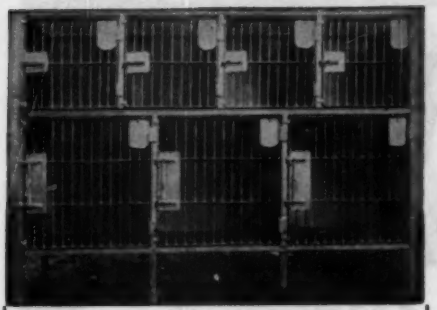

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WANTED—veterinary associate, 90 per cent large animal practice, dairy cattle and swine. Modern clinic with kennels and large animal facilities, two-way radio. Annual gross $50,000. In Middlewest. Address "Box C 1," c/o JOURNAL of the AVMA.

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WANTED VETERINARIAN—small animal hospital in Los Angeles area. Gentile, California license, at least one year's experience, either large or small animals. Salary open. Address "Box C 6," c/o JOURNAL of the AVMA.

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D.P. veterinarian, graduated from Leipzig University, Germany, in 1945, 30, married, no children, will accept a position with an established veterinarian as an assistant—in large or small animal practice. Knowledge of English. Address "Box C 2," c/o JOURNAL of the AVMA.

POSITION WANTED—graduate licensed veterinarian, age 26, desires position with general practitioner or small animal hospital. Experienced with small and large animals. Single, has car. Address "Box C 9," c/o JOURNAL of the AVMA.

(*Continued on p. 38*)

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The male hormone has the capacity of causing retention of nitrogen, so necessary for tissue repair and restoration. Use PERANDREN for virility and muscular tone. Clients are greatly pleased whenever loss of breeding opportunities can be arrested and additional services had from prized breeding animals. Use PERANDREN in the impotent male animal.

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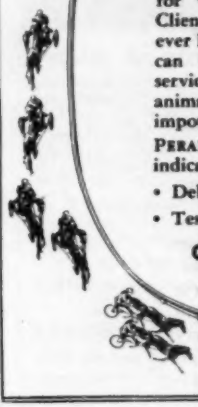

GOSHEN Leads...

(CLASSIFIED ADS — *continued from p. 36*)

Recent graduate, New York license, desires assistantship in mixed practice leading to partnership or ownership, in upstate New York. Address "Box C 11," c/o JOURNAL of the AVMA.

Danish Veterinarian interested in internship with American veterinarian. Danish university degree and three years' experience. Particularly interested in sterility and fertility among cows. Completely familiar with English. Address S. N. Holck, Veterinarian, Aarslev, Denmark.

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POSITION WANTED—young, experienced veterinarian, graduate of AVMA-approved school, draft-exempt, would like to lease practice with option to buy, or partnership. Michigan, Ohio, or Indiana preferred. Address "Box C 13," c/o JOURNAL of the AVMA.

WANTED—small animal partnership either by purchase or eventual partnership agreement. Graduate of AVMA-approved school, two years' experience, married, reliable, congenial. Address "Box C 12," c/o JOURNAL of the AVMA.

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Experienced graduate of an AVMA-approved school desires practice which is 50 per cent, or more, large animal. Interested in a location east of the Mississippi River. Address Dr. M. J. Green, Warsaw, Ind.

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FOR SALE—veterinary hospital in California, fully equipped, 110 kennels, living quarters; $4,800 per year. Price $58,000, $17,500 down. Health forces

(*Continued on p. 40*)

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A new text-book for TEACHERS, STUDENTS and PRACTITIONERS.

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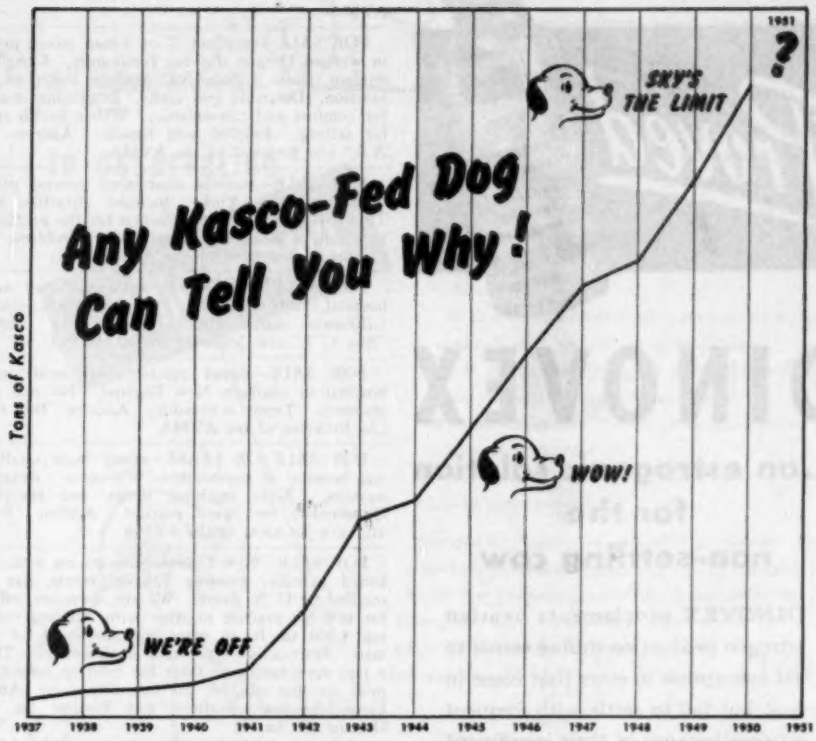
For sale by book dealers, also by the Author, George R. White, P. O. Lock Box 901, Nashville, Tennessee.



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DINOVEX supplements ovarian estrogen production during estrus to aid conception in cows that come in heat but fail to settle with frequent services because of their insufficient estrogen production.

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Veterinary Division

ORTHO PHARMACEUTICAL CORPORATION

Raritan New Jersey

(CLASSIFIED ADS — *continued from p. 38*)

sale. Address "Box Z 12," c/o JOURNAL of the AVMA.

FOR SALE—excellent 2- or 3-man mixed practice in western Oregon thriving community. Completely modern clinic. Beautiful, modern home in conjunction. Desirable real estate. Everything designed for comfort and convenience. Wife's health reason for selling. $40,000 will handle. Address "Box A 6," c/o JOURNAL of the AVMA.

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FOR SALE OR LEASE—attractive small animal hospital, fully equipped. Good location, southern California coastal city. Ideal climate. Address "Box C 7," c/o JOURNAL of the AVMA.

FOR SALE—mixed practice and small animal hospital in southern New England. No real estate involved. Terms reasonable. Address "Box C 8," c/o JOURNAL of the AVMA.

FOR SALE OR LEASE—newly built small animal hospital in southeastern Wisconsin. Apartment upstairs. X-ray machine, drugs, and equipment. Opportunity for mixed practice. Address "Box C 10," c/o JOURNAL of the AVMA.

FOR SALE—New Orleans veterinarian with established practice, grossing $25,000 yearly, has been recalled by U. S. Army. We are, therefore, offering for sale his practice together with building containing 3,300 sq. ft. of space and apartment for night man. Practice is 75 per cent small animal. This is a real opportunity, as there has been an animal hospital on this site for the last fifty years. Address Eason-Jeansonne, Realtors, 821 Poydras St., New Orleans 12, La.

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(*Continued on p. 42*)

From operation

to observation

within an hour

You'll save valuable time in operative procedures when your intravenous anesthestic is ultra-short-acting PENTOTHAL Sodium. Prompt effect, anesthesia for 10 to 20 minutes and quick recovery make it possible for the animal to undergo surgery and be on its feet for observation *within an hour.* Anesthesia for longer periods than 20 minutes can be maintained by repeated small injections. Other advantages of PENTOTHAL Sodium:[1]

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- It is easier for the surgeon and makes better technique possible.
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1. Muhrer, M. E. (1950), Restraint of Swine with Pentothal Sodium, J.A.V.M.A., 117:293, Oct.

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The treatment of choice in Shipping fever — Pneumonia Necrophorus Infections

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Have a supply on hand

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(CLASSIFIED ADS — *continued from p. 40*)

FOR SALE—ultra-modern concrete and metal kennel on busy U. S. Rt. 309, near Philadelphia. Ideal for thriving animal hospital. For photo and description, see advertisement in *Dog World* or *North American Veterinarian*, January, 1951 issues, or write Berolina Kennels, Hatfield, Pa. Attractive terms.

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(*Continued on p. 44*)

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NOW adapted for Surgery and Cautery use for the VETERINARIAN in general practice.

- Uniform Constant Heat
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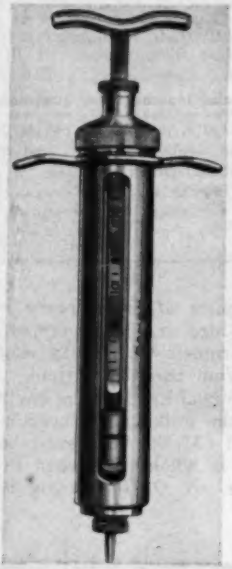

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Inexpensive replacement parts available

Inquire at your nearest veterinary dealer or wholesaler concerning this outstanding product.

Sizes 2 cc. to 40 cc.

Boston Record Syringes

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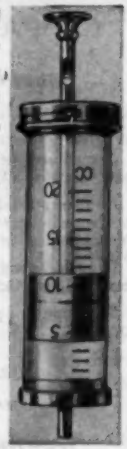

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Repair exchanges available.
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HEAVILY GALVANIZED SHEETS
NO EXTRA CHARGE!

Bottoms are water-proof trays with ½" turned up edges, heavily soldered together. Braced, aluminum painted, 1½" angle iron frames. Door frames 1" O. D. pipe. Dog proof mesh filler welded to frame. All sheets heavily galvanized.

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SIZES: 3 upper stalls 24" x 24" x 28" deep.
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Overall size: 6' wide x 5'6" high x 28½" deep.
Stalls Stand 6 in. off Floor.

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Ford DOUBLE FRAME Panel Runs insure SAFETY for your dogs. Chain link fabric is rust resistant, cannot be spread; permanently locked by INNER BAR FRAME. NO TIE WIRES TO RUST. Clamp together. No bolt holes to match. Portable or permanent construction.

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Address .....

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(City and State)

(CLASSIFIED ADS — *continued from p. 42*)

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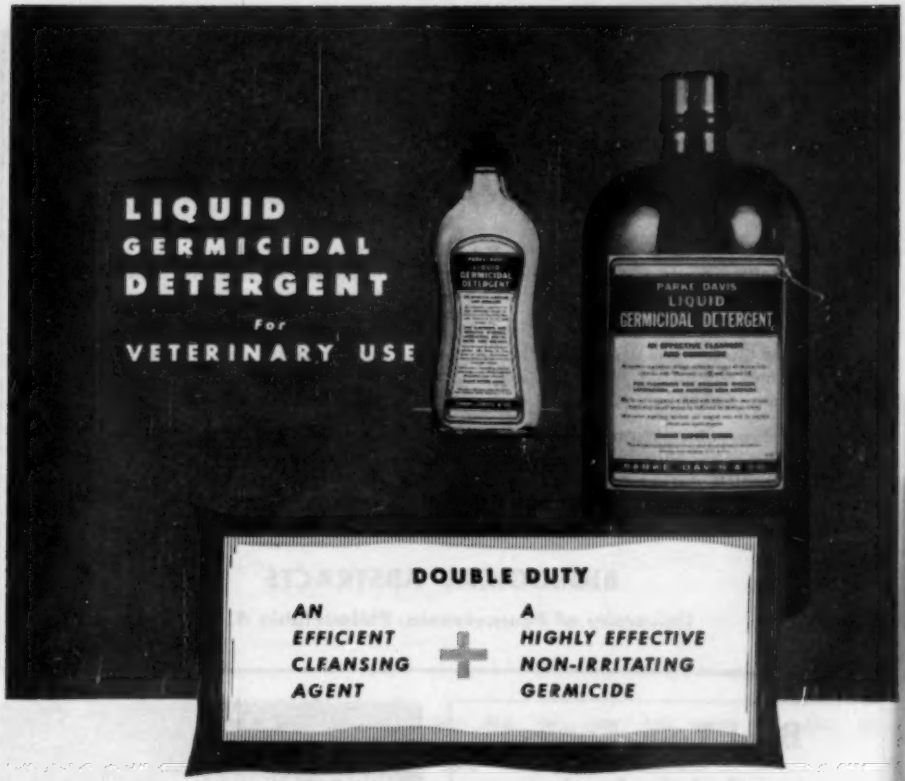

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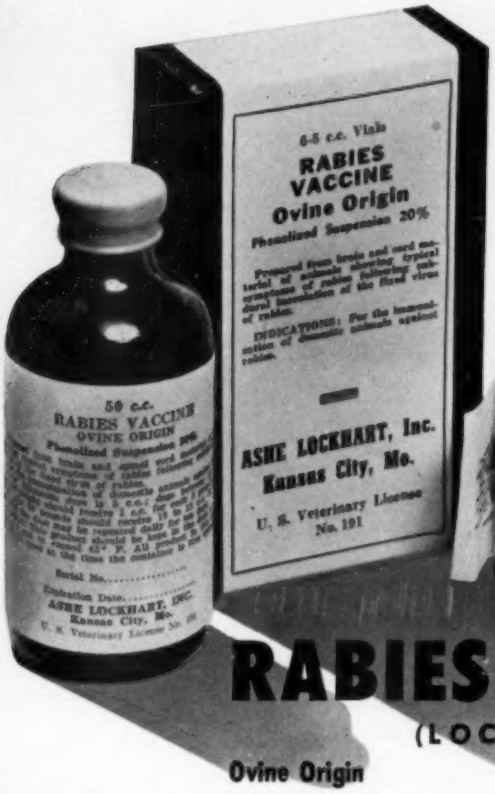

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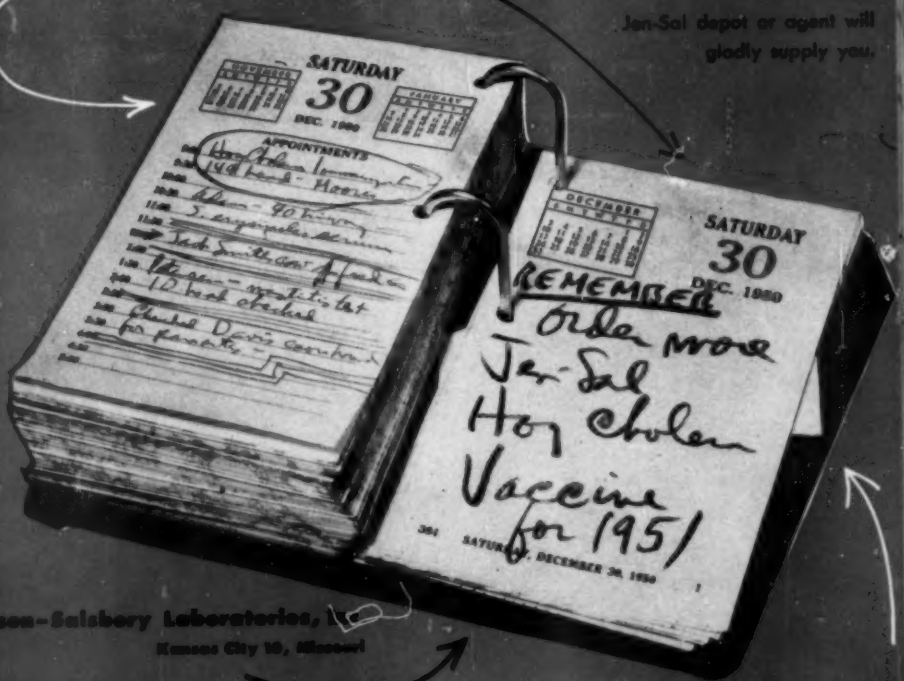

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